

Introduction to the reference management program Zotero

Zotero is a free reference management program that allows you to collect, organize, and export sources. Exporting these sources enables you to create citations and bibliographies. Detailed [documentation](#) on how to install and use Zotero is available online.

The following introduction does not cover every feature of Zotero, but provides an overview of the most important commands. It begins by describing the installation of the program and the Zotero interface. If you want to start by importing sources into Zotero right away, you can begin by reviewing the sections [Add a reference via Connector](#) or [Add a reference via Import](#).

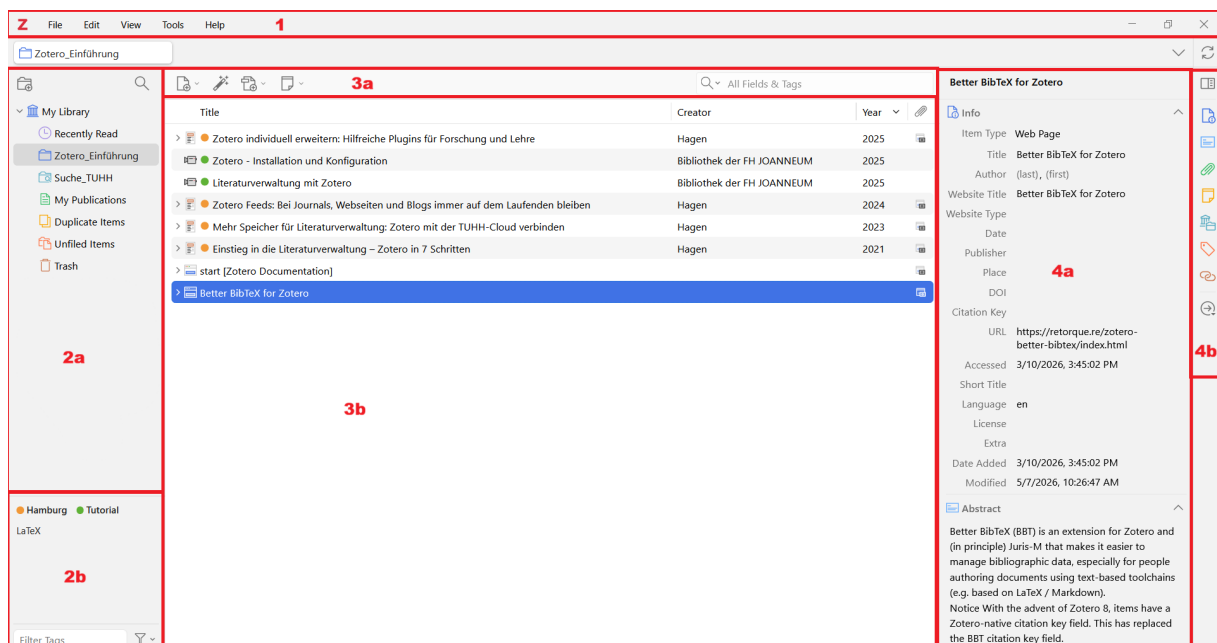
Installation

Zotero is downloaded from a [download webpage](#). There, you can install the Zotero program for various operating systems as well as the Zotero connector for various browsers.

The connector allows you to automatically import sources from your browser into Zotero. We therefore recommend installing it. After installation, a Z-icon (Z) usually appears in the top-right corner of the browser. You must first click on it and confirm before you can start using the connector. Sometimes the connector may be hidden in the browser extensions. In Firefox or Chrome, extensions are represented by a puzzle icon (P). It is recommended that you pin the Zotero icon to the top bar of the browser.

Zotero is already preinstalled on Linux systems at the University Library's computer stations and in the URZ computer pools (*Anwendungen* → *Büro* → *Zotero*). However, the connector for your preferred browser still needs to be installed.

User Interface Layout



The Zotero user interface consists of a header (1) and three main columns. The left column (2) contains an area for the folder structure (2a) and an area for tags (2b). The

middle column (3) contains a menu bar (3a) and the item area (3b). The right column (4) contains an information area (4a) and an icon area (4b).

Header (1)

Settings: Under Edit → Settings, you can configure a wide range of preferences for Zotero and any installed plugins.



Groups: In addition to *My Library*, you can create additional libraries that support group collaboration. A new *Group Library* can be created by going to *File* → *New Group*. After selecting *New Group*, you will be redirected to the online version of Zotero. To use the online version, you must [register with Zotero](#). In addition to a group name, you must also select a group type. After creating the group, you can configure additional settings online and invite members to the group. If the local Zotero instance has been connected to the online version via synchronization, the *Group Libraries* will appear under *My Library*. Further information about [groups](#) can be found in the Zotero documentation.

Feeds: An RSS feed from a journal or website automatically notifies you of updates (such as new journal articles). The corresponding URL can be found on the relevant website. A new feed can be added in Zotero under *File* → *New Feed* → *From URL*. If the URL is valid, the corresponding title will appear automatically after adding the URL (this can be changed). After clicking OK, the feed will appear under the libraries in the right column. Entries in a feed can be marked as read or unread and added to a library.


Left column - Folder structure (2a)

My Library: A reference is added to the middle column as an item. All items are stored in *My Library*. Your library contains predefined special folders and can be organized into collections. However, collections only contain links to the items. This means that items can be included in multiple collections without creating duplicates. This structure also applies to *Group Libraries*.

Recently Read: This special folder contains all items whose attachments have been viewed most recently.

Collections: You can create a new collection by clicking the folder plus icon () in the top-left corner or by right-clicking on *My Library*. Each collection is marked with a blue folder icon (). Right-clicking on a collection allows you to create subcollections, rename collections, or delete them. Deleting a collection removes only the collection itself, not the items in *My Library*. However, you can delete both the collection and its items by selecting the option *Delete Collection and Items*.

My Publications: You can publish your own publications on the Zotero platform using the *My Publications* folder. When you drag an item of your own publication into the folder, a wizard opens to guide you through the publishing process. You can also assign a license.

Duplicate Items: The *Duplicate Items* folder displays duplicate entries that can be merged. Selecting an item in this folder automatically selects all duplicates as well. If you do not want a duplicate to be included, you can remove it from the selection by holding down the Ctrl key and clicking on the item. When merging duplicates, a primary version must be selected unless all metadata matches. In addition, a selection field () next to the metadata can be used to specify the content. Items of the same type (item type) can also be merged outside the Duplicates folder. To do this, all

relevant items must be selected, and the *Merge Items* option must be selected via a right-click.

Unfiled Items: All items that are not included in any collection are displayed in this folder.

Trash: The wastebasket collects all items that are to be permanently deleted. The time limit for automatic deletion can be set in the settings (*General* → *Miscellaneous*). The default setting is 30 days. Items in the wastebasket can be restored by right-clicking and selecting the *Restore to Library* command.

Left column - Tags (2b)

The tag area displays the keywords (tags) that have been assigned to the items in a collection. Selecting a tag displays only the items associated with that tag. Clicking the selected tag again deselects it.

For an item, you can add new tags in the right column by clicking the icon *Tags* (🏷️) and using the plus symbol. When importing a reference (item), keywords may be automatically imported as tags. These are then displayed in black (instead of blue) under *Tags*. In the tag area, you can hide or delete automatic tags by clicking the filter icon (🔍).

Tags can be assigned colors. To do this, you must right-click on the tag in the tag area and select the *Assign Color* option. Each color is also assigned a number. If you select an item and press the corresponding number, the associated tag is automatically added. Pressing the number again removes the tag.

In Windows, emojis can also be used as tags, which expands the range of available colors. In the *Tags* field (the right column for an item), you can use the **Windows + .** keyboard shortcut to open the emoji selection. The emoji appears at the beginning of the item title, just like a color.

Items in the middle column can be dragged onto a tag in the tag area to automatically assign that tag to the items. If items are dragged onto a tag while holding down the Shift key, the tag will be removed from all items.

You can delete or rename tags globally by right-clicking on a tag in the tag area.

Middle column - Menu bar (3a)

New Item (📄): You can use this icon to create items manually. To do so, select the appropriate item type. This option should only be used if the connector or the standard import function is not working.

Add Item(s) by Identifier (🔍): This icon allows you to create items using identifiers (ISBN, DOI, PMID, ...). To do so, enter the corresponding identifier. Multiple identifiers can also be separated by commas.

Add Attachment (📎): This icon allows you to add standalone files or attach files to items. To attach a file to an item, you must first select the item. You can also attach files to items by right-clicking on the item. Files (such as PDFs) can also be dragged from your computer into Zotero. If the file is a standalone PDF, a parent item can be created. To do this, right-click on the PDF and select the option *Create Parent Item*. You can then import the metadata of a reference either via an identifier or by entering it manually.

New Note (📝): You can use this icon to create standalone notes and item notes. Item notes are associated with a specific item, so you must first select an item. You can also add a note to an item by right-clicking on the item. Additionally, you can use the icon **Notes** (📖) in the right column. When creating a note, an editor opens in the right column. By clicking the three dots in the editor, you can open it in a separate window. In the editor, you can also assign tags and relationships.

Quick Search: On the right side of the menu bar, there is a search bar for quick searches. Clicking the magnifying glass icon allows you to specify which fields to search.

Advanced Search: The *Advanced Search* is located behind the magnifying glass next to the search bar. Searching is only possible within a single library. Multiple search criteria can be combined. This can be done either by selecting *Match all* (logical “and” operator) or *Match any* (logical “or” operator). Furthermore, the percent sign (%) acts as a wildcard. It can serve as a placeholder for any number of characters. Search results can also be saved. When an advanced search is saved, a corresponding search folder (📁) is created in the left column. Its contents are automatically updated when there are new hits for the saved search. By logically combining saved searches under *Advanced Search* (using *Collection* as search criterion), complex searches are possible. Although a search folder can be found under *My Library*, it has different properties than a collection. For example, items unrelated to the search cannot be placed in the folder.

Search attachments: Attached PDFs and text files can be searched using *Quick Search* (search using *Everything*) and *Advanced Search* (search criterion: *Attachment Content*). For this purpose, Zotero automatically indexes the attachments. In the settings (*Advanced* → *Search*), you can set limits for indexing. The index status of a PDF or text file can also be viewed in the attachment information in the right column under *Indexed*.

Middle column - Item area (3b)

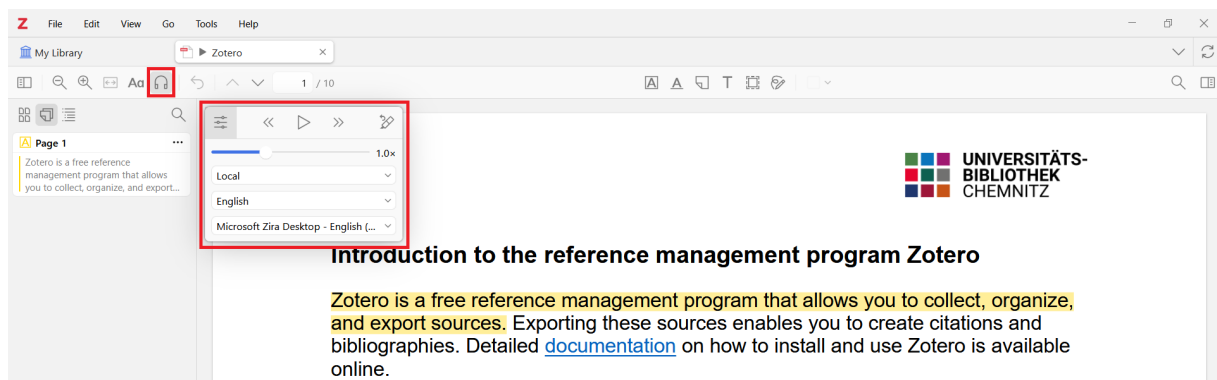
The header of the item area consists of various fields (Title, Creator, Attachments, ..). Clicking on a field allows you to sort the items in ascending or descending order by that field. Right-clicking on the header opens a submenu where additional fields can be added. Furthermore, the fields within the header can be moved using drag and drop.

Items can be dragged from *My Library* into collections. After selecting an item, press the Ctrl key to highlight all collections in the right column that contain that item. To delete an item from a collection, either press the Delete key or right-click the item and select *Remove Item from Collection*. To permanently delete the item (including from *My Library*), use the *Move Item to Trash* option.

After selecting one or more items, you can quickly generate bibliographies or citations in a text file or email. To do this, simply drag the selected items from Zotero into the corresponding program. To create a citation, hold down the Shift key while dragging. Alternatively, you can use *Edit* → *Copy Bibliography* (or *Edit* → *Copy Citation*). The citation style used is set in the settings (*Export* → *Quick Copy*). Additionally, a bibliography can also be created by selecting items and right-clicking on them. To do this, select the *Create Bibliography from Items* option. You can then choose the citation style, language, and output method.

Zotero includes a built-in Reader (see the figure below). Unless otherwise specified in the settings (*General* → *Reader*), a PDF or snapshot will open in the Reader when you double-click on the document. There, you can highlight, underline, or annotate text passages.

The “Read Aloud” option (headphone icon (🎧) in the Reader menu bar) allows you to have PDFs or snapshots read aloud in the Reader. Clicking the headphone icon starts the function. You can choose between three voice sources: Normal, Premium and Local. Information on quality, origin, costs and limitations can be found in the [blog post on Zotero 9](#). Once the “Read Aloud” option has been activated, you can start or stop the reading via the corresponding dialogue box. You can also adjust the reading speed and the voice source, and highlight the passages being read aloud.



Right column - Information area (4a)

The information area contains detailed information about an item's metadata, attachments, keywords, and relationships. The various sections can be accessed via drop-down menus or the icons in the icon area.

Right column – Icon area (4b)

Info (🔗): This field allows you to edit an item's metadata. To do so, click on the corresponding row. Any changes made to a row are saved automatically.

Abstract (📄): This field contains, for example, the abstract of an article.

Attachments (📎): This field contains all PDFs and screenshots associated with an item. You can add new attachments by clicking the plus icon.

Notes (📝): This field contains all notes for an item. Clicking the plus icon opens the note editor to create a new note.

Libraries and Collections (📁): This field shows the folder structure to which an item belongs.

Tags (🏷️): This field contains all tags (keywords) associated with an item. You can add new tags by clicking the plus icon.

Related (🔗): In this field, you can specify relationships to other items or notes. Clicking the plus icon opens a selection window. The relationship is also automatically added to the information area of the selected items or notes. This field is often used to represent the relationship between a book and its chapters.

Locate (🔍): This icon is not related to the information area. It provides search options for the item via the internet. By selecting the *Library Lookup* option, you can search for the literature associated with the item in a predefined catalog. This allows you, for

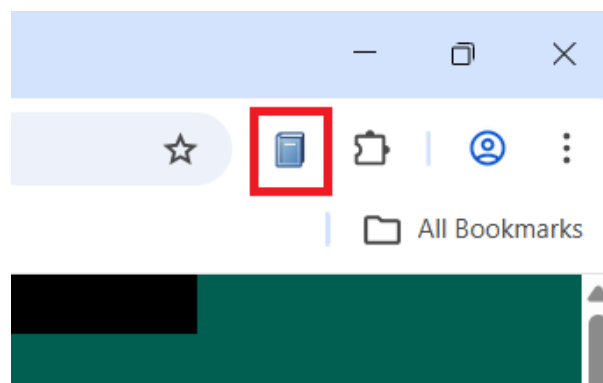
example, to check whether the literature is available in your own library. Before this option can be used, a connection to the library catalog must be established in the settings (*General* → *Locate*). To do this, enter the library's resolver URL in the *Base URL* field (with the resolver option *Custom*). The URL for the Chemnitz University Library is:

https://www-fr.redi-bw.de/links/?rl_site=tuche

Add a reference via Connector

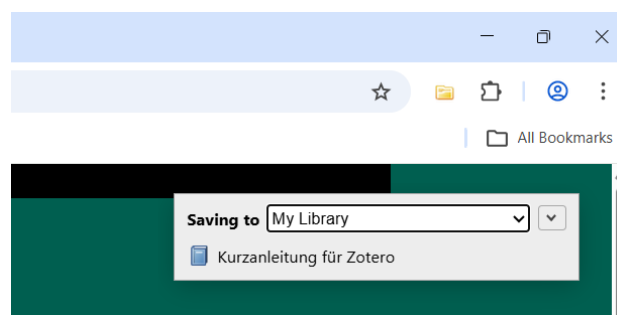
The fastest way to import literary sources as items is by using the Zotero connector. It automatically detects the document type, associated metadata, and available PDFs on a webpage.

After clicking the Z-icon (top right of the browser), a document type icon appears in its place (see the figure below). This can be a folder (📁), a book (📖), an article (📄), a PDF (📄), or a similar icon. Clicking the corresponding icon adds the reference to Zotero. The Zotero application must be open for this to work.



After clicking on a folder icon, a selection window opens. There, you can select individual entries from a catalog or database, or individual chapters of an e-book, for example.

A download window will appear when you click the document type icon or select items from the list (see the figure below). The download will be saved to the library or collection currently selected in Zotero. You can also use this window to change the save location or add tags. To do so, click the arrow next to the save location. Once the download is complete, the window will close.



The quality of metadata can vary from website to website. As a result, it is possible for two entries for the same source to differ from each other. Using *Duplicate Items*, the entries can be combined into a single, consolidated entry.

In principle, every item should be checked after automatic import to ensure consistent citations.

Add a reference via Import

You can import sources into Zotero by exporting them from a database in a standard format (such as RIS or BibTeX). The exported file is first saved to your computer. You can then open and upload the file to Zotero via *File* → *Import*. For information on importing from other reference management programmes, please refer to the [Zotero documentation](#).

Importing via a standard format should also be used when a large number of sources need to be extracted from a database. The Zotero connector may reach its limits in such cases.

To import sources, you can also use the icon *Add Item(s) by Identifier* (magic wand symbol), which is described in the section on the user interface layout.

Synchronisation

When using Zotero locally, all items and attachments are stored on the computer you are using. In the settings (*Advanced* → *Files and Folders* → *Data Directory Location*), you can view the default storage location or specify a custom one.

Synchronisation allows Zotero content to be accessed simultaneously on multiple devices and online. A distinction is made between data syncing and file syncing.

During data syncing, all items and notes are synchronised. The service is free of charge and unlimited. To set up synchronisation, enter your login details for the online version of Zotero in the settings (*Sync* → *Data Syncing*). This links the local version to the online version. This process can be repeated on as many devices as you like.

Synchronisation takes place automatically whenever a change is made. This can be changed in the settings. Furthermore, manual synchronisation is possible by using the synchronisation icon (☁). This is located above the icon area in the right column.

During file syncing, attachments to an item (such as PDFs or images) are synchronised with the online version of Zotero. To do this, you must select the option *Sync attachment files in My Library using Zotero* in the settings (*Sync* → *File Syncing*). However, only the first 300 MB are free of charge. Additional storage must be purchased.

An alternative to file syncing via the online version of Zotero is to use WebDAV. The [TUCcloud](#) can be used for this purpose, as it supports WebDAV. The steps for synchronising with WebDAV are described below.

1. In the settings (*Sync* → *File Syncing*), select the option *Sync attachment files in My Library using WebDAV*. Then enter the WebDAV URL, username and password. This information is provided by the [URZ](#).
2. The URL and username can be taken from the URZ. The password still needs to be created in the TUCcloud. Use the link provided. Go to the *Devices and Sessions* section, enter *Zotero* as the app name, and generate a password. Make a copy of the password and return to Zotero.
3. Enter the generated password and click *Verify Server*.
4. If the setup was successful, a folder named “zotero” will be created in the TUCcloud. Attachments will be stored online there from now on.

Plugin – Better BibTeX

Zotero can be extended using plugins. A [list of plugins](#) can be found in the Zotero documentation. Below, we describe the benefits of the [Better BibTeX](#) plugin. This plugin is particularly useful when writing a paper in LaTeX. Instructions for downloading and installation in Zotero are provided on the plugin website.

In LaTeX, the references in a bibliography are imported via a bib-file. Such a file can be created using the export function in Zotero. After right-clicking on a library, collection or selection of items, you can select the export option. An export window will open, in which you can select the desired format and a number of properties.

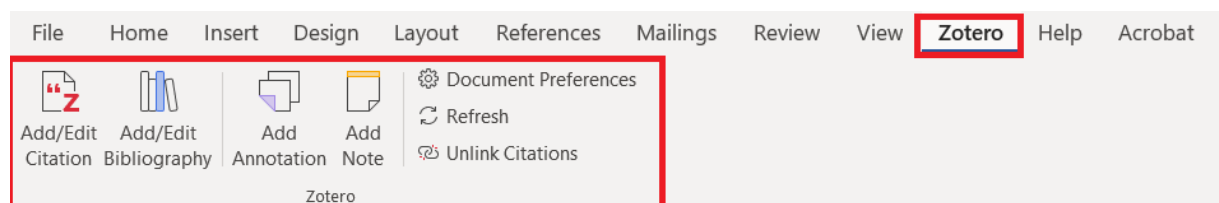
Every source entry in a bib-file contains a citation key, which establishes the link between the citation in the text and the entry in the bibliography. When using the standard *BibLaTeX* export in Zotero, new citation keys are assigned in the bib-file each time. If the bib-file needs to be replaced in LaTeX due to changes to the sources, the citation keys in the new bib-file may no longer match those in the citations. With *Better BibTeX*, consistent citation keys can be defined.

Better BibTeX allows you to permanently link a library or collection in Zotero to a bib-file in LaTeX via an automatic export. To do this, select the *Better BibLaTeX* format and the *Keep updated* option in the export window. A bib-file linked to Zotero is created. Changes to the metadata of the items are automatically applied. As the selected citation key usually depends on an items metadata, it changes when the metadata is modified. To ensure consistent use of the citation key during automatic export, the citation key for an item must be fixed. To do this, right-click on the item in Zotero and select the option *Better BibTeX* → *Pin BibTeX key*. The fixed citation key appears in the *Extra* row of the item information.

Changes to the syntax of citation keys and specifications for automatic export can be made in the settings (*Better BibTeX*). Multiple linked bib-files can be created and managed in the settings.

Integration with word processing programs

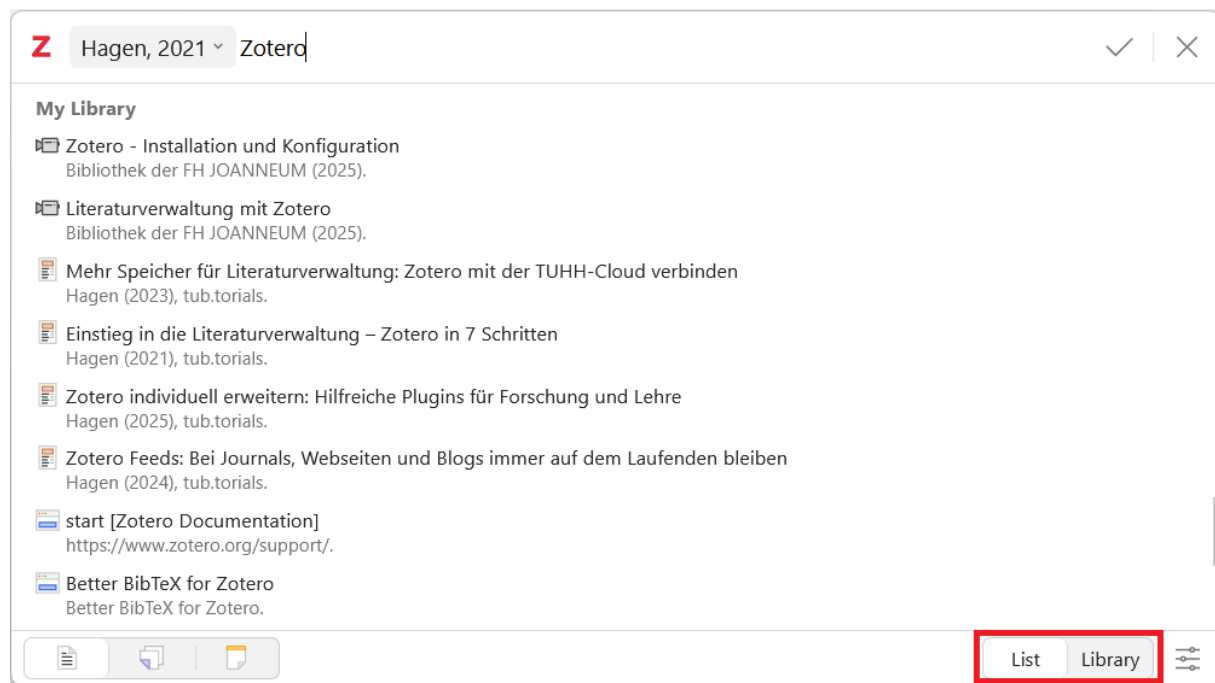
The connection between Zotero and a word processing program (Word or LibreOffice) is usually established automatically when Zotero is launched on the computer for the first time. Zotero icons (see the figure below) are inserted into the programs, enabling users to insert citations and create a bibliography. In Word, the icons can be found under a new tab called *Zotero*. If the connection is not established automatically, it can be set up in the Zotero settings (*Cite* → *Word Processors*).



Linking Zotero to a word processing program enables automatic updates. For example, this allows you to import changes made to items in Zotero or to change the citation style used throughout the entire document in one go. However, if manual changes are made to the references or the bibliography, or if built-in editors are used, this link is broken. In that case, updates are no longer possible. Manual changes should only be made once the document has been finalised and a backup copy has

been created. At this point, the *Unlink Citations* icon can also be used to remove the link between Zotero and the word processing program. The citations and the bibliography are converted into plain text, which can then be edited manually.

To create a citation, place the cursor at the desired position in the text and click the *Add/Edit Citation* icon. The first time you use this feature, the document preferences will appear. Here, you can select the desired citation style and adjust other preferences. Once the settings have been confirmed, a selection window appears (see the figure below). The window has two views: List and Library.



In the list view, you can search for citations by entering part of the title, author's name or year of a source stored in Zotero. You can search for and select multiple sources in succession. For each search, the possible matches are displayed below the input field. Clicking on a match adds the source to the input field. The reference is then contained in a grey bubble (in the example Hagen, 2021). To insert the references as citations into the document, click on the tick on the right (✓).

Multiple references in the input field are sorted automatically. If you do not want this, you can reorder them within the field. You can also toggle the sorting function on and off by clicking on the settings icon (⚙️).

By clicking on the small arrow next to the reference in the input field, you can add further details (such as the page number) as well as prefixes and suffixes to the citation. It is also possible to remove the author from the citation. HTML tags can be used in the prefixes and suffixes, for example to display the text in bold (`Text`).

In addition to the list view, there is also the library view. Here, sources can be selected directly from Zotero's library structure. If you select a library and then enter a search term in the input field, you can also search through the items. Clicking the plus icon next to an item adds the sources to the input field.

Should the citation need to be modified at a later stage, this must never be done manually, but only via the selection window. After selecting the citation in the text, click the *Add/Edit Citation* icon. The selection window will open again and changes can be made.

To create a bibliography for the citations in the document, place the cursor at the desired position in the text and click the *Add/Edit Bibliography* icon. The bibliography created is linked to Zotero. Therefore, any subsequent changes to the references should always be made in Zotero; otherwise, the link will be lost and automatic updates will no longer be possible. If an item used as a reference in the bibliography is modified in Zotero, the changes can be transferred to the text document by clicking the *Refresh* icon. You should therefore avoid making manual changes to the bibliography.

Once you have created a bibliography, you can also add sources that do not have a citation in the text. To do this, click the *Add/Edit Bibliography* icon again. A menu for editing the bibliography will appear. In the upper part of the window, items can be transferred to the bibliography. The lower part is an editor for references, the use of which is not recommended. If edits are made there, the connection to Zotero is lost. This means that updates are no longer possible.

The citation style and other settings can be changed whilst working on the document by clicking the *Document Preferences* icon. In this menu, under *Manage Styles*, you can also search for additional citation styles via Zotero's settings. Changing the citation style affects all citations and the entire bibliography within a document.

You can import notes or annotations from Zotero into the document using the *Add Node* and *Add Annotation* icons. To do this, place the cursor at the desired position in the text. Once you have selected the relevant icon, the selection window will appear again. With *Add Node*, you can search for notes in both views as usual. However, only items with notes are displayed. With *Add Annotation*, there is only a library view and also only items with annotations are displayed. An annotation could, for example, be a highlight in a PDF via the Reader. If the highlighted PDF text is transferred to the document, a citation is also created. This makes it easy to incorporate direct quotations from a PDF.

Related Links

[Video tutorials](#) on Zotero from the FH Joanneum Library (German only)

[Information](#) on Zotero from the University Library TU Hamburg (Blog posts in German only)

Anja Hähle
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