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Implementation Guide of Multimedia-based & Interactive Content Project Output #4 of the



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About the Project

The project serves to exchange experiences and develop digital skills, especially in the multimedia area within the participating organization's staff. Furthermore, the development and use of M&I learning materials should be worked out together, brought into context with multiple devices and developed in comprehensive documentation. A particular focus is put on methodology and approaches to support seniors in this digital-oriented learning and trainings. Furthermore, the organizations will use the gained experience and knowledge to promote Erasmus+ programs - and in this sense especially courses - to all generations in their home countries.

The project aims to increase the knowledge and skills in the participating organizations to create and use M&I content, with particular attention to multiple devices and a specific focus on seniors.

Contact and further information

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1. MULTIPLE DEVICES

Material taken from the study (not comprehensive material - this should be the extra document)

1.1. About Multiple Devices

Multiple Devices¹ refers to the set of all devices that can be used in technology-enabled learning². These devices can be stationary or mobile and differ in size, performance, operating system, and other characteristics.

List of devices that can be used in the learning process:

Desktop PC

A desktop PC is a type of personal computer that is designed to be used in a stationary location, such as a home or office. It typically includes a central processing unit (CPU), memory, storage, various input/output ports, and peripheral devices. Desktop PCs can be used for a wide range of tasks, including web browsing, email, word processing, gaming, and video editing. They are generally larger and more powerful than portable laptops, and offer more expansion options, but are less portable.

A PC needs a screen, and the typical screen size is measured in inches. Currently, 22" - 30" screens, with a pixel ratio of 16:9 (or similar) is standard.



Image 1: Desktop PC (Source: Unsplash, Sebastian Bednarek, License: CC0)

¹ The term “Multiple Devices” refers to the use of multiple electronic devices, such as smartphones, tablets, laptops, and computers, to access information, complete tasks, and communicate with others. These devices can be used in various combinations and contexts, such as in the classroom, at home, or on the go, to support different learning needs and styles.

² Technology Enabled Learning (TEL) refers to the use of technology to enhance and support the learning process. This can include a wide range of tools and technologies such as online learning platforms, virtual reality, artificial intelligence, and mobile devices. TEL aims to improve the efficiency and effectiveness of learning by making it more accessible, personalized, and interactive.

Laptop (Notebook)

A laptop, also known as a notebook, is a type of portable personal computer. It features most of the same internal components as a desktop PC, such as a central processing unit (CPU), memory, storage, and various input/output ports, but everything is packed in a single portable unit with a built-in keyboard and display. Laptops can run on battery power and are designed for portability, making them convenient for use in a variety of settings, including at home, in the office, and on the go. They are generally smaller and less powerful than desktop PCs but offer more portability and mobility. Budget Windows laptops generally have a 13.3" to 15.6" screen size with a resolution of 1366 x 768 pixels. This is fine for utmost home uses. Better laptops commonly have sharper screens with a resolution of 1920 x 1080 pixels or further.



Image 2: Laptop (Source: Unsplash, Howard Bouchevereau, license CC0)

Chromebook

A Chromebook is basically a laptop using the Chrome OS operating system (developed by Google). The hardware is more or less identical to a laptop. This type of device uses the Google Chrome web browser as its primary interface, and most of the applications and data stored on the device are web-based and accessed through the internet. This means that a Chromebook is less dependent on local storage and more dependent on a reliable internet connection to access various services, such as Google Docs, Gmail, and YouTube. They are generally lightweight, have a long battery life, are designed for users who primarily use the web for their computing needs, and work well for students and those who need a low-cost, simple, secure, and easy-to-use device for browsing and doing basic tasks. The screen resolution matches with laptops.

Convertible

A convertible is a type of device that can be used as both a laptop and a tablet. It generally has a hinge technique that allows the display to rotate (to an angle of 180 degrees) and fold back onto the keyboard, transforming the device into a tablet. The device usually comes with a touch-sensitive display and a built-in stylus, making it easy to use in tablet mode. It also has all the features of a traditional laptop, such as a keyboard, trackpad, and various ports, making it a versatile device that can be used for a wide range of tasks, such as web browsing, email, word processing, and media consumption. The device usually runs on Windows or Chrome OS and is a suitable option for users who want the benefits of both a laptop and a tablet in one device. The screen resolution matches with laptops.

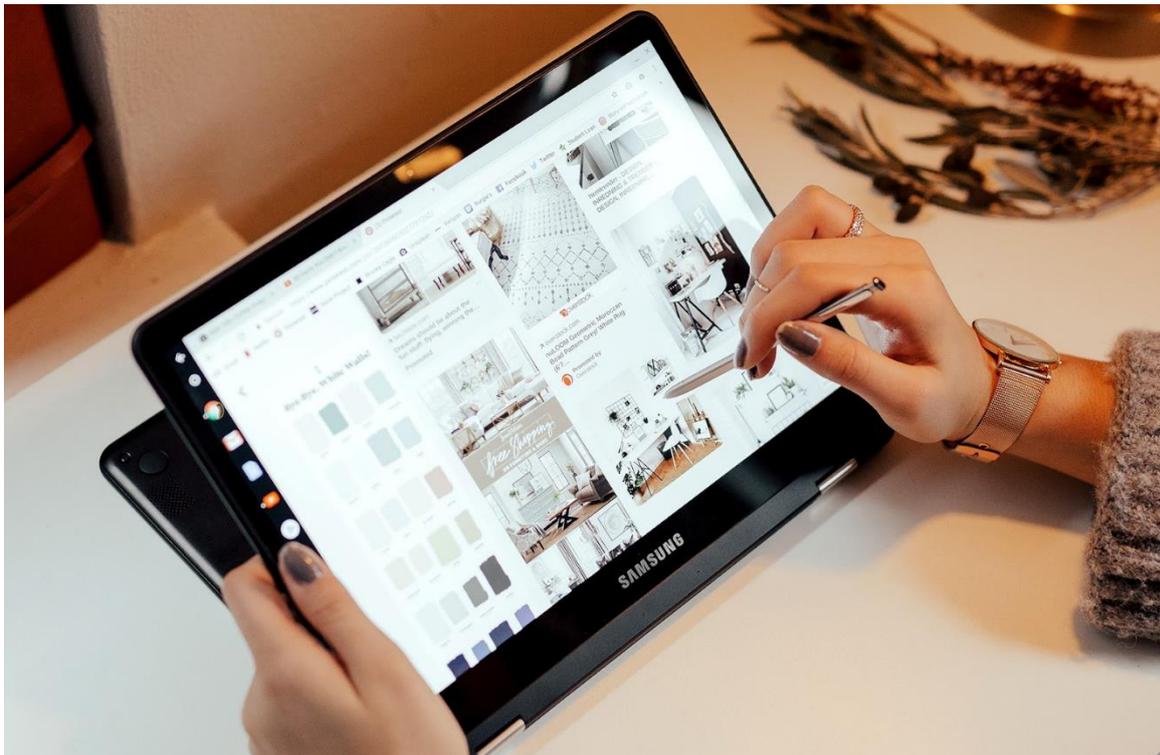


Image 3: Convertible (Source: Unsplash, Brooke Cagle, license: CC0)

Tablet

A tablet is a portable device that typically has a touch-sensitive screen. As a pointing device, the fingers are used. A physical keyboard is missing and replaced by an on-screen virtual keyboard (covering some space on the screen). Tablets are generally smaller and thinner than laptops and have longer battery life. They are designed for portability and convenience and are often used for tasks such as web browsing, email, media consumption, and gaming. Many tablets come with built-in cameras and microphone and can run a wide range of apps, such as social media, productivity, and entertainment apps. They can be connected to a keyboard or a monitor to increase their functionality. Tablets are generally considered to be less powerful than laptops, but they are more portable and convenient to use. Tablets use iOS (Apple), Android, Windows, and Chrome OS as operating systems.



Image 4: Tablet (Source: Unsplash, License: CC0)

Smartphones

Smartphones are mobile devices that combine the functionality of a computer with the convenience of a mobile phone. They have advanced capabilities such as internet access, camera, GPS, and various sensors, as well as the ability to run apps and access a wide range of digital content.

In context with the learning process, smartphones might be a powerful tool for both students and educators. They own an inbuilt connection to the internet (based on G4 and G5 technology, referring to the fourth and fifth generations of mobile telecommunications technology). Screen size is in the range of 5" and 6" (with the most common resolution of 720x1280 pixels). 1080 x 1920 as the typical HD resolution is also available. Smartphones have a touchscreen in general and use the finger as a pointing device as well as a virtual keyboard. The main difference to tablets is the smaller screen size and the inbuilt phone.

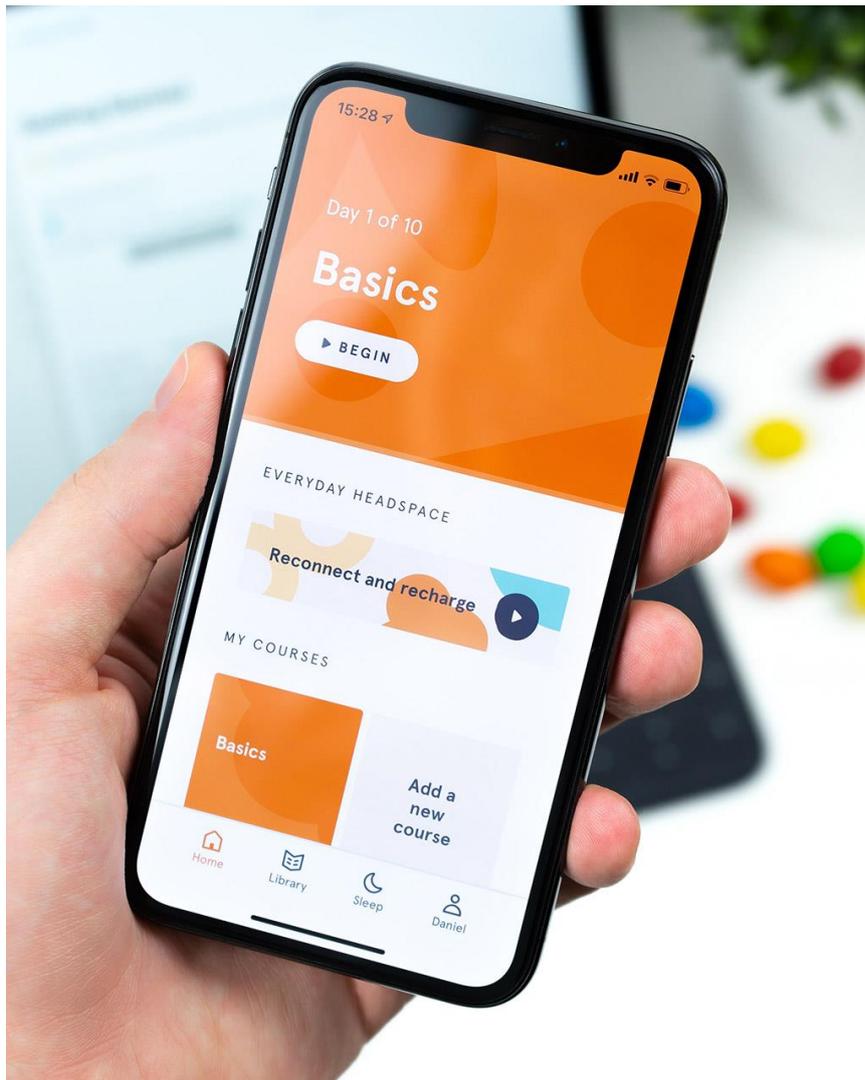


Image 5: Smartphone (Source: Unsplash, Daniel Korpai, License: CC0)

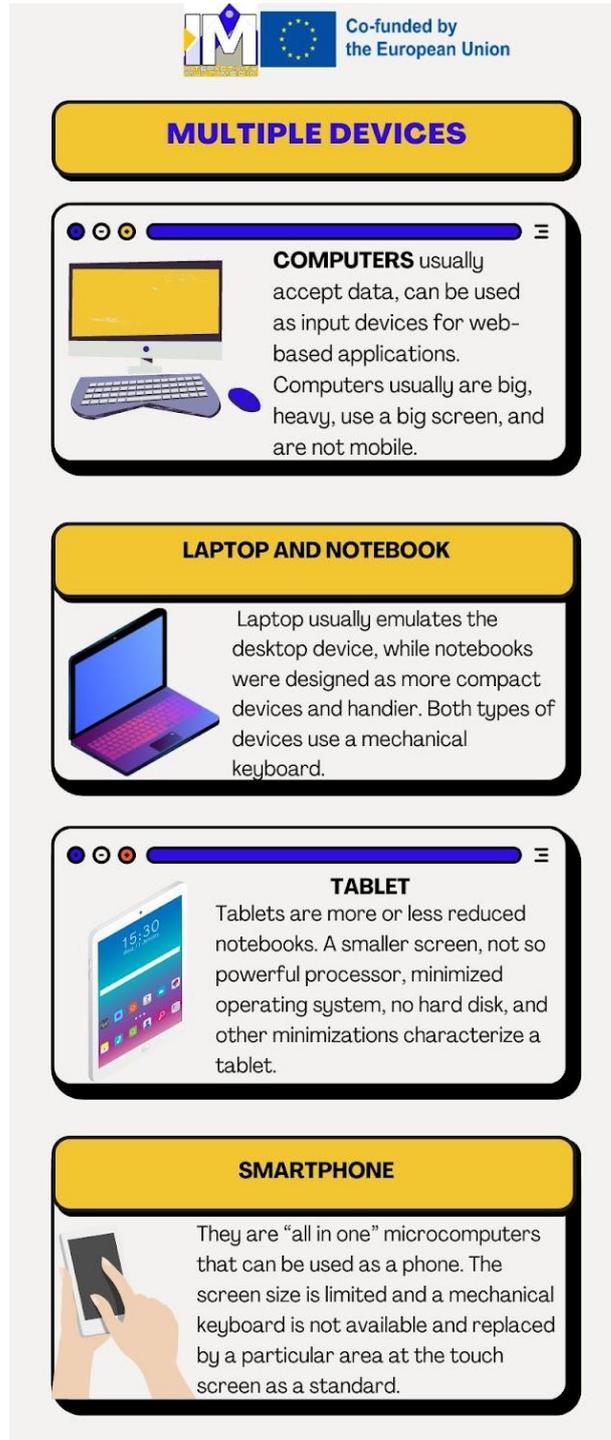
1.2. Overview of features of Multiple Devices

Device	Screen / Touchscreen	Keyboard	Pointing device	Operating System
Desktop PC	Screen	Yes	Mouse	Windows IOS Linux
Laptop	Screen / Touchscreen	Yes	Mouse / Finger / Pad	Windows IOS Linux
Chromebook	Screen / Touchscreen	Yes	Mouse / Finger / Pad	Android
Convertible	Screen / Touchscreen	Yes	Mouse / Finger / Pad	Windows IOS Linux
Tablet	Touchscreen	Virtual	Finger	IOS / Android / (Windows)
Smartphone	Touchscreen	Virtual	Finger	IOS / Android / (Windows)

Table 1: Overview device features (comparison table)

1.3. Multiple Devices – a graphical overview

The following infographics show the different devices at our disposal:



MULTIPLE DEVICES

COMPUTERS usually accept data, can be used as input devices for web-based applications. Computers usually are big, heavy, use a big screen, and are not mobile.

LAPTOP AND NOTEBOOK

Laptop usually emulates the desktop device, while notebooks were designed as more compact devices and handier. Both types of devices use a mechanical keyboard.

TABLET

Tablets are more or less reduced notebooks. A smaller screen, not so powerful processor, minimized operating system, no hard disk, and other minimizations characterize a tablet.

SMARTPHONE

They are “all in one” microcomputers that can be used as a phone. The screen size is limited and a mechanical keyboard is not available and replaced by a particular area at the touch screen as a standard.

Graphik 1: Info Sheet devices (Source: Cristina Ceccarelli, EuphoriaNet)

In addition to the most common, we can also find Chromebook and Convertibles. You can find more profound descriptions in the text above or in our report on multiple devices available here: [Multiple Devices](#).

As you can see, multiple devices differ in screen size, in the different options of data storage, and in the way to use them (with a keyboard, touch screen, etc.)

1.4. Devices used in Adult Education

Situation in Youth Education

Smartphones and tablets are very common in youth training because they are portable, convenient, and easy to use. Young people are often comfortable with technology and are more likely to use these devices for learning and training. Additionally, smartphones and tablets are often less expensive than laptops, making them more accessible to young people who may not have access to more expensive devices.

The use of mobile devices also allows for more flexible and personalized learning experiences, as learners can access materials and resources anytime and anywhere. Finally, mobile devices are increasingly being integrated into educational technology platforms, allowing for seamless integration with learning management systems and other tools used in youth training programs.

Working adults (people in the process of work) or employed in a company

People in the working process or employed typically use laptops, desktop computers, and mobile devices such as smartphones and tablets for their learning. The choice of device depends on the individual's preferences and the type of learning activity.

Laptops and desktop computers are often preferred for longer, more complex learning activities, such as online courses or training programs that require more extensive reading and writing. These devices provide larger screens, full-sized keyboards, and more processing power, making it easier to engage in these activities.

Mobile devices such as smartphones and tablets are often used for shorter, more informal learning activities such as watching videos or accessing quick reference materials. They are also convenient for on-the-go learning, as they can be easily carried and accessed anytime and anywhere.

The increasing popularity of mobile learning is also driving the use of mobile devices for learning in the workplace. Mobile learning offers several benefits, including flexibility, accessibility, and personalized learning experiences. It allows learners to access learning materials and resources on demand, which can help to improve knowledge retention and skill development.

Overall, the choice of devices for learning in the workplace depends on the individual's needs and preferences, as well as the type of learning activity. Employers and trainers should consider the different device options when designing learning programs to ensure that they are accessible and effective for all learners.

Finally, the availability of devices plays a certain role: Many people can use their (vocationally used) laptops in their private life as well. This situation enables them to use this equipment for learning. Nevertheless, there are restrictions in the use of these laptops given by the employer often.

Older people

When it comes to selecting devices for their learning processes, older people, including the 65+ generation, tend to have different preferences and needs compared to younger generations. Some of the factors that older people may consider when selecting devices for their learning include:

- **Ease of use**
Older people may prefer devices that are intuitive and easy to use, with larger buttons, clear font sizes, and minimal navigation required.
- **Accessibility**
Devices that are accessible, such as those with text-to-speech functionality or closed captions, may be preferred by older people who have hearing or visual impairments.
- **Portability**
Older people may prefer lightweight and portable devices such as tablets or laptops, which can be easily carried and used in different locations.
- **Familiarity**
Older people may be more comfortable using devices that they are familiar with or have used in the past, such as traditional desktop computers or flip phones.
- **Cost**
Older people may also be more price-conscious and may prefer more affordable devices such as budget laptops or basic smartphones.

In various training courses, the trainers made the experience that the group of older adults repeatedly use discarded devices of their children. These are fully functional, but always have outdated software installed or have low performance (due to their age).

It is important to consider the preferences and needs of older learners when designing learning programs and to provide training and support to ensure that they can effectively use the devices selected for their learning. Providing clear and simple instructions, offering technical support, and using platforms and tools that are user-friendly and accessible can help to ensure that older learners can engage in learning effectively and with confidence.

Hint: Professional working needs an appropriate device (must be described)



Image 7: Working on a laptop, using the pad, a mouse is available on the right hand (Source: Štefan Štefančík, unsplash.com)

The virtual keyboard also can cause problems for elderly people who may have difficulty with fine motor skills, reading small text, or adapting to new technology.

Overall, virtual keyboards are a convenient and versatile input method, but their limitations should be taken into account when choosing an input method for writing. As technology continues to evolve, virtual keyboards will likely become more advanced and more suitable for longer texts. But it is important to keep in mind that not all users may find them easy to use and alternative input methods should be considered.

Several issues and problems can arise when training on a virtual keyboard. Some of these include:

- **Visibility**
The virtual keyboard can take up a significant portion of the screen, covering important information or buttons that the user needs to see. This can make it difficult for users to accurately input text or navigate through a website or app.
- **Typing speed and accuracy**
Because of the small size of the keys on a virtual keyboard, typing can be more difficult and time-consuming than with a physical keyboard. This can be a problem for users who need to quickly input large amounts of text. Additionally, the lack of physical feedback can make it harder for users to know if they have pressed a key correctly, resulting in errors.
- **Fine motor skills**
Typing on a virtual keyboard requires precise finger movements, which can be difficult for users who have difficulty with fine motor skills. This can make it hard for them to type accurately and quickly.

- **Adaptation**
Virtual keyboards can be difficult to adapt to, particularly for users who are not familiar with touchscreen technology or who have difficulty reading small text. This can make it hard for them to use a virtual keyboard effectively.
- **Limited Functionality**
Virtual keyboards may not have all the features of a physical keyboard, such as the ability to type numbers and symbols, or the ability to use shortcuts.
- **Battery consumption**
Using a virtual keyboard will consume more battery than a physical keyboard.

1.5. Problem - Screen Size

Here is a statement we got from a learner:

“To read content on a smartphone’s screen is more difficult than from a Desktop PC monitor.”

That sounds quite plausible, but where are the stumbling blocks and problem areas?

The analysis must take into account two major issues:

- (a) The ability to physically read a text and
- (b) The fact that if it is not presented well, content cannot be appropriately absorbed by the learner.

(a) The ability to physically read the text.

This is actually a problem in Adult Education. As adults age, their ability to read decreases; medicine calls this phenomenon presbyopia. This means that older adults need reading glasses. Furthermore, with age comes clouding of the cornea (cataract), this process leads to a deterioration of reading ability (and can eventually be corrected by surgery). These health impairments make reading difficult for older adults. This is especially true for small screens, as with smartphones.

Here is the same text, displayed on a Desktop PC, a tablet, and a smartphone. Please make the following consideration:

- The tablet’s with is approximately twice the display of a smartphone.
- Smartphones are commonly used with a portrait setting, while all other devices are used in a landscape mode.

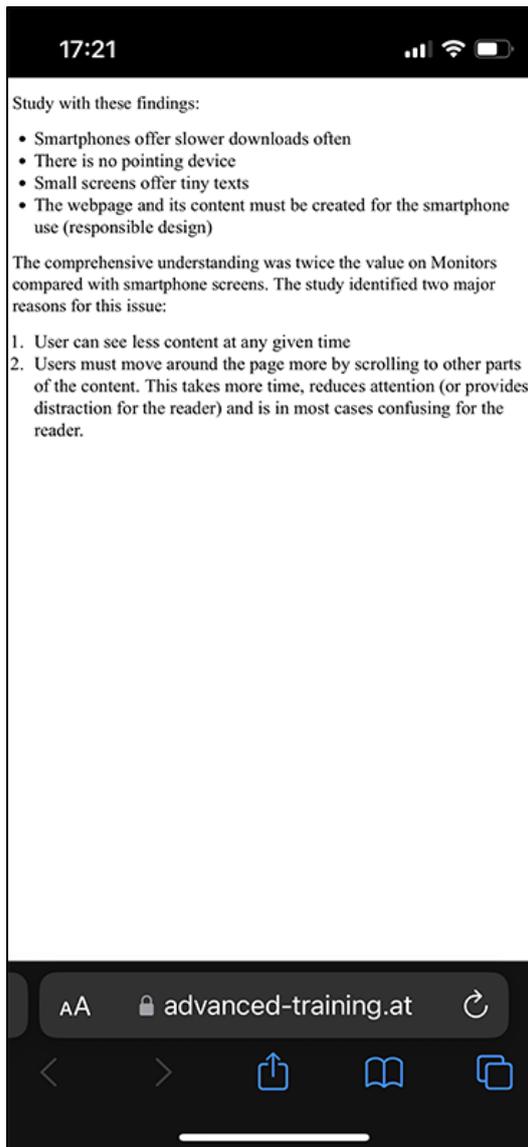


Image 8: Smartphone display (Source: Peter Mazohl, EBI)

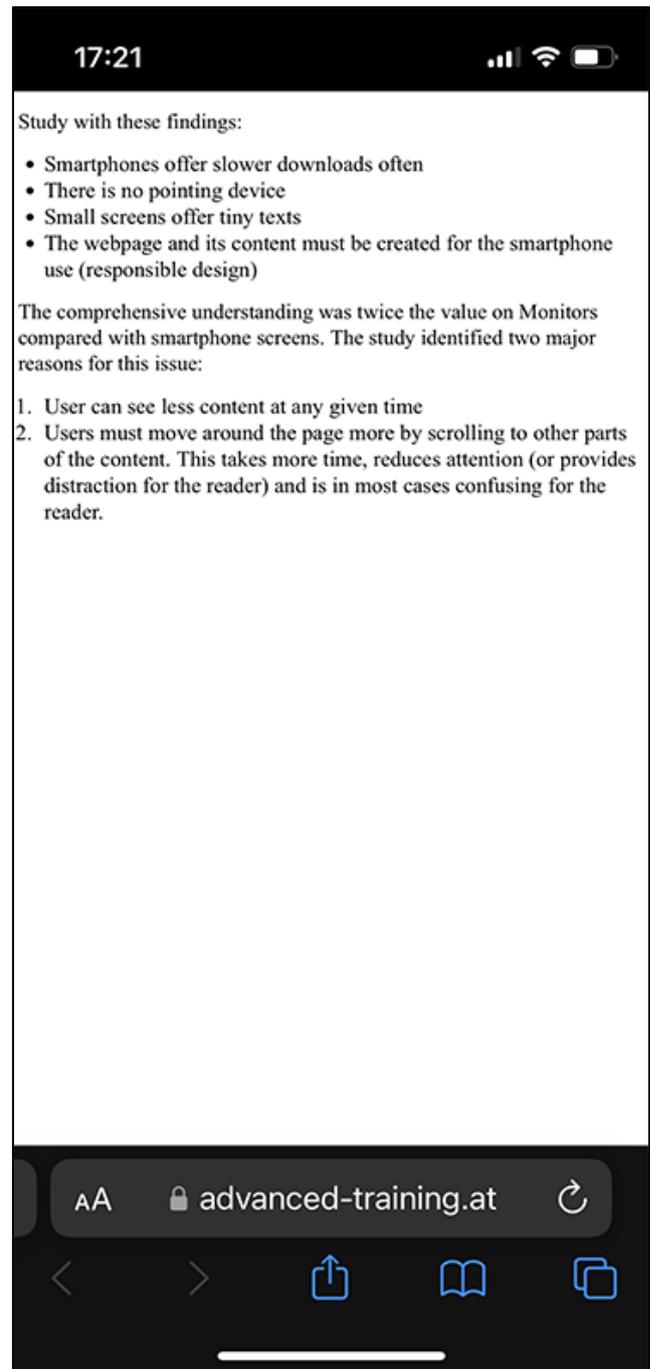


Image 9: The screen of a 10" Tablet (Source: Peter Mazohl, EBI)

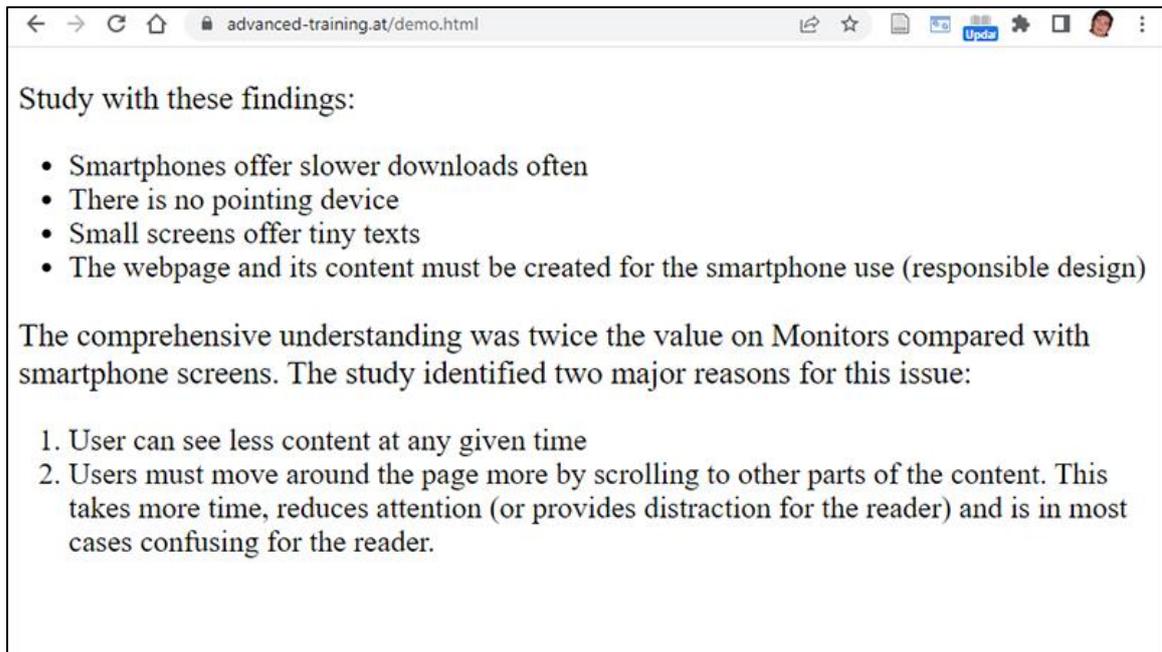


Image 10: Text in the screen of a 14" tablet (Source: Peter Mazohl, EBI)

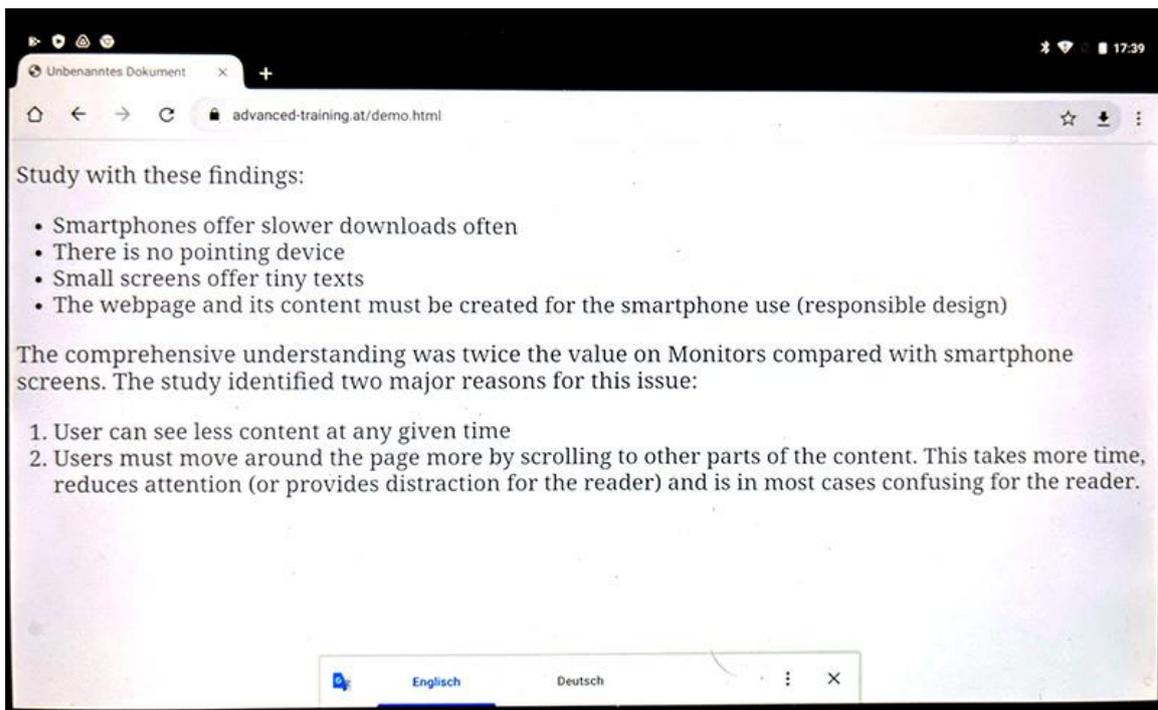


Image 11: Screen of a 13" Chrome Book (Source: Peter Mazohl, EBI)

(b) The fact that if it is not presented well, content cannot be appropriately absorbed by the learner.

A Desktop PC's monitor can display a lot of text on the screen. Using a tablet offers similar power of display. Using a Smartphone limits the visibility of the text (not only by the size of the letters). Simply, there is not so much space available to display the complete text. Users have to scroll more often (compared with other devices), do not get displayed the complete

sentence, lists are only displayed partly, and tables cause problems anyway due to the small space on the display.

The Nielsen Norman Group (<https://www.nngroup.com>) published a study in 2016 with these findings:

- Smartphones offer slower downloads often.
- There is no pointing device.
- Small screens offer tiny texts.
- The webpage and its content must be created for smartphone use (responsible design)

R.I. Singh (University of Alberta) found out that it's much harder to understand complicated information when you're reading on tiny devices. The study compared reading a complex text from both a Desktop monitor and a Smartphone display. The comprehensive understanding was twice the value on Monitors compared with smartphone screens. The study identified two major reasons for this issue:

- User can see less content at any given time
- Users must move around the page more by scrolling to other parts of the content. This takes more time, reduces attention (or provides a distraction for the reader), and is in most cases confusing for the reader in most cases.

Recommendations

1. Be aware of the problem of displaying content.
2. Use a responsive design that covers the complete range of multiple devices.
3. Learning material must be tested on all possible devices.
4. Create your content following the target group.
5. To supply older people, provide the option to enlarge the text.
6. Organize your content in a way that each context is displayed on one screen of a smartphone without scrolling.
7. Divide pages into smaller chunks.
8. Use small images not overloaded with details.
9. Do not use tables if they can be avoided.
Tables with more than three columns cannot be read even if you turn the smartphone into landscape mode.
NEVER use nested tables.
10. Use fonts that are easy to read.
11. Use short URLs – typing longer web addresses is annoying with smartphones.

1.6. Other identified issues

Besides the problem of screen size, other issues prevent users of smartphones from efficient learning processes.

- **Reading PDFs on Smartphones is difficult.**
PDFs are designed in almost all cases in the A4 print format (29,7 cm x 21 cm). From these documents, the displaying for these sources, the content is presented page by page. This makes it difficult to read the text. If the document is enlarged in the display, only a section is shown, which is confusing and unclear.

- Display of a document including a QR code**
 In most cases, the code is too small to be identified by the code reader - due to the small resolution of the QR code (which is a simple graphic) the enlargement of the QR often is not possible.
- Apps and programs missing from smartphones**
 If you use more than simple HTML pages, you must be aware that additional content can be displayed, and applicable apps are available for each smartphone.
- Problem with the operating system.**
 Webpages are based on HTML 5, CSS, and JavaScript. All (modern) multiple devices can handle this type of content with their inbuilt or installed browsers (Google Chrome and Firefox for all devices, Microsoft Edge on Desktop PC and Windows-based devices, Safari for iPhones, and iPads).
 If you use specific software to work with content, check the availability of apps for all devices.
Example: Use of Videos, PowerPoint Presentation
- Compatibility of software, and the use of software products, changes.**
 Be aware to cover all devices with your used software.
 Example: The Macromedia tool Flash was used to produce multimedia content for years. Flash is not supported anymore. Nevertheless, there exist thousands of (well-done and valuable) multimedia presentations or simulations. Due to the missing support for Flash, these learning contents cannot be delivered to the learner or displayed by the learner.

Content is often confusing on small displays.



Image 12: Compare content on different displays.

Some of the key issues include visibility problems as the virtual keyboard can cover up parts of the screen, typing speed and accuracy can be affected by the small size of the keys, fine motor skills can be affected, adaptation to the virtual keyboard is difficult for some users and limited functionality of the virtual keyboard. Additionally, content readability can be difficult on small displays, and certain apps and programs may not be available for smartphones. Furthermore, some apps and programs may not be compatible with certain operating systems, and the compatibility of software can also be a problem. Finally, security concerns are also an issue, as virtual keyboards may be vulnerable to **hacking and keylogging**.

1. **Content readability on small displays**

Reading text or viewing content on small screens, such as smartphones, can be difficult due to the small size of the text and images. This can make it hard for users to read PDFs, view extensive pages in a learning platform, or read small text on a document with a QR code. This can be especially challenging for users with visual impairments.

2. **Missing apps and programs for smartphones**

Some apps and programs may not be available for smartphones, which can limit the functionality of the device. This can make it difficult for users to access certain features or complete certain tasks on their smartphones.

3. **Operating system compatibility**

Some apps and programs may not be compatible with certain operating systems, such as Android and iOS. This can make it difficult for users to access certain features or complete certain tasks on their smartphones.

4. **Compatibility of software**

Different devices may not be compatible with certain software or apps, which can limit the functionality of the device. This can be a problem for users with older devices, as they may not be able to use the latest software or apps.

5. **Security concern**

Virtual keyboards may be vulnerable to hacking and keylogging. This can be a concern for users who need to input sensitive information, such as passwords or credit card numbers.

2. ANALYSIS MULTIMEDIA & INTERACTIVE TOOLS

This analysis aims to delve into the various aspects, features, and functionalities of multimedia tools, such as videos, images, animations, and interactive elements, and how they can be effectively utilized in a given setting.

Definitions

Multimedia tools are software applications and programs used to create, edit, and manipulate various media types, such as audio, video, images, and text. Examples of multimedia tools include video editing software, image editing software, audio editing software, and animation software.

Web-based tools are software applications and services that are accessed and used through a web browser rather than installed on a local computer. These tools can be used for various purposes, such as productivity, communication, project management, etc. These tools are often referred to as "cloud-based" or "Software as a Service (SaaS)" as they are hosted on remote servers and accessed via the internet.

Interactivity refers to the ability of users to actively participate and engage with a system rather than simply observing or consuming it. This can be achieved through different forms of user input, such as clicking on buttons, selecting items from a menu, or entering text. The system then responds in some way, such as by displaying new information, playing a sound, or performing a specific action.

In the context of multimedia and the web, interactivity often refers to the ability of users to interact with multimedia content, such as videos, images, and audio, through different input forms, such as clicking, dragging, and typing. Interactivity can also refer to the ability of users to interact with web pages, such as by filling out forms, clicking on links, or scrolling through content. Interactivity is a key feature of many modern web and multimedia applications, allowing users to have a more engaging and personalized experience.

2.1. The rationale for using interactive and multimedia-based tools in learning and training.

Active learning³ is a teaching method that encourages students to engage actively with the material and take an active role in their own learning. Some advantages of active learning include:

- **Increased engagement:** Active learning methods, such as group discussions, hands-on activities, and problem-based learning, can help to increase student engagement in the material and make learning more enjoyable and relevant.
- **Improved understanding:** By actively engaging with the material, students are more likely to develop a more profound understanding of the concepts and retain the information for longer.

³ Active learning refers to an instructional approach that actively engages learners in the learning process through various participatory and interactive activities. It involves shifting from a passive, lecture-based teaching style to one that encourages students to take an active role in acquiring knowledge and skills.

- **Better problem-solving skills:** Active learning methods, such as problem-based learning, can help students develop critical thinking, problem-solving, and decision-making skills.
- **Greater flexibility:** Active learning methods allow for a more flexible and adaptable teaching style, which can benefit students of different learning styles and abilities.
- **Greater student ownership:** Active learning methods put the students in charge of their own learning, which makes them more motivated, committed, and responsible for their own learning process.
- **Greater collaboration and teamwork:** Many active learning methodologies, such as group work, peer instruction, and group discussions, provide opportunities for students to work together and learn from one another.

Technology-enabled⁴ Active Learning

Technology supports the learning and training process at different levels.

- **Access to information:**
Technology, such as the internet, can provide students with access to a vast amount of information, resources, and educational materials. This can help to expand their knowledge and understanding of a subject.
- **Personalized learning:**
Technology, such as learning management systems and adaptive learning software, can provide students with personalized learning experiences based on their individual needs and learning styles.
- **Engagement and motivation:**
Technology, such as interactive multimedia and games, can make learning more engaging and motivating for students.
- **Collaboration and communication:**
Technology, such as social media, instant messaging, and video conferencing, can help students collaborate and communicate with their peers and instructors.
- **Feedback and assessment:**
Technology, such as online quizzes, surveys, and digital portfolios, can help instructors provide students with immediate feedback on their progress and understanding of the material.
- **Flexibility:**
Technology, such as e-learning platforms, can provide students with flexibility in terms of time, place, and pace of learning, which can be beneficial for those with busy schedules or other commitments.
- **Accessibility:**
Technology, such as assistive technology, can make learning more accessible for students with disabilities and special needs.

⁴ The term "technology-enabled" refers to the integration and utilization of technology to enhance or support a particular process, activity, or system – in our case the learning process. It signifies the incorporation of digital tools, software, hardware, or online platforms to enable and optimize functionality, efficiency, and effectiveness.

Overall, technology can be an effective tool for enhancing the learning experience, providing new opportunities for students to access and engage with information, and helping educators to create more effective and efficient teaching methods.

Conclusion

Multimedia-based and interactive content support efficiently active learning makes it more fun (for the learners) and supports the trainers (and teachers) in implementing continuous formative (and final) assessments that can be evaluated easily.

2.2. Types of tools

Many different types of multimedia tools exist, and they can be broadly grouped into several categories:

- **Audio tools**
These tools are used to edit and manipulate audio recordings. They include tools for trimming, splicing, and applying effects to audio files.
We recommend and use: Audacity⁵
- **Video and video editing tools**
These tools are used to edit and produce videos. They include tools for cutting and trimming footage, adding transitions and special effects, and adjusting audio levels.
We used Adobe Premiere⁶
- **Image and image editing tools**
These tools are used to manipulate and enhance digital images. They include tools for cropping, resizing, retouching, and applying filters.
We recommend and use: CANVA⁷
- **Animation tools**
These tools are used to create animated graphics and videos. They include tools for designing and animating characters, backgrounds, and special effects.
We recommend and use: Animaker⁸
- **Presentation tools**
These tools are used to create and deliver multimedia presentations. They include tools for creating slides, adding multimedia elements such as images and videos, and presenting

⁵ **Audacity** is a free and open-source audio editing software widely used for recording, editing, and manipulating audio files. With its intuitive interface and comprehensive set of features, Audacity allows users to perform tasks such as trimming, mixing, applying effects, and exporting audio in various formats.

Link: <https://www.audacityteam.org/>

⁶ **Adobe Premiere** is a professional video editing software developed by Adobe Systems and does not exist in a free version. It offers a comprehensive set of tools and features for editing, organizing, and exporting high-quality videos, making it a popular choice among filmmakers, videographers, and content creators.

⁷ **Canva** is a user-friendly graphic design platform that allows users to create stunning visual content such as social media graphics, presentations, posters, and more. With its intuitive interface and a wide array of customizable templates and design elements, Canva enables individuals and businesses to produce professional-looking designs without the need for extensive design skills. Link: <https://www.canva.com>

⁸ **Animaker** is an online video-making platform that offers a wide range of tools and templates for creating animated videos, explainer videos, presentations, and more, allowing users to easily bring their ideas to life with captivating visuals and animations.

content in a visually engaging way.

We recommend and use: CANVA, H5P⁹

Screen recording tools: These tools are used to record and capture on-screen activity. They are commonly used for creating instructional or tutorial videos.

Virtual reality tools: These tools are used to create immersive digital environments. They include tools for designing and building 3D models and environments, as well as tools for creating interactive experiences using virtual reality headsets.

⁹ **H5P** is an open-source content creation tool that allows users to create interactive and engaging online learning experiences. With a variety of interactive elements and templates, H5P enables educators and content creators to enhance their digital content with quizzes, interactive videos, presentations, and more, fostering active learning and user engagement.

This table gives an overview of the possible use of the analyzed tools. The detailed description of each tool will give a deeper-going information.

Tool	Audio	Image	Video	Interactive Video	Presentation	Quiz & Test	Miscellaneous
Animaker			✓				
CANVA		✓	✓		✓		✓
eXe-Learning		✓				✓	✓
HTML-Validator							✓
Padlet							✓
H5P Framework			✓	✓	✓	✓	✓
PowToon			✓				
Audacity	✓						
ThingLink							✓
W3Schools							✓

Table 2: Comparison table of analysed tools (Source: InterMedia Project Team).

[1] Animaker

This is a cloud-based Do-it-Yourself animated video-making app, with in-built features to address the growing demand of animated video making.

Link: [Animaker](#)

Description

The tool allows you to easily design and create 2D cartoons. The learning effort is limited but necessary.

The central element is characters that are animated and can also speak lip-sync texts. As basic equipment, there are various theme-based backgrounds, graphics, videos, images, and more. Own files (images, sound, ...) or logos can be uploaded and used.

The videos created are built on timelines. These videos can be downloaded as .mp4¹⁰, played locally, and incorporated into learning platforms.

The videos created with the free version have a watermark and are only available under HD 720p¹¹.

Comment

Animaker is a nice tool if you want to create short 2D cartoons. The learning time is affordable, and you will improve with each new video.

[2] CANVA

This tool offers a versatile graphic framework. The company offers free PRO-access for non-profit training organisations.

Link: [CANVA](#)

Description

Canva is a graphic design platform that allows users to create visual content for various purposes such as graphics, presentations, info sheets, and more.

Some advantages of Canva include:

- **Easy to use**
Canva has a user-friendly interface that is easy to navigate and requires no prior design experience.
- **Templates**
Canva offers a wide variety of templates that are customizable, making it easy for users to create professional-looking designs quickly. Templates we estimate as useful for learning are available for

¹⁰ MP4, short for MPEG-4 Part 14, is a popular digital multimedia container format that allows for the storage and playback of video, audio, and other media files, providing a widely compatible and efficient format for content distribution.

¹¹ HD 720 refers to a high-definition video resolution standard, specifically 1280x720 pixels, which provides a sharp and clear image quality suitable for various digital media applications.

- * Documents
 - * Whiteboards
 - * Presentations
 - * Infographics and
 - * Graphs.
- **Stock images and elements**
Canva provides access to a library of over a million stock images, illustrations, and elements that can be used to enhance designs.
 - **Collaboration:**
Canva allows multiple users to work on a design simultaneously, making it easy for teams to collaborate on projects.
 - **Affordability**
Canva offers a free version as well as a paid version with additional features, making it accessible for individuals and businesses of all sizes.
Hint: Non-profit organisations may apply for a free PRO-version.
 - **Integration**
CANVAS offers numerous options for export and the integration in Learning Platforms.

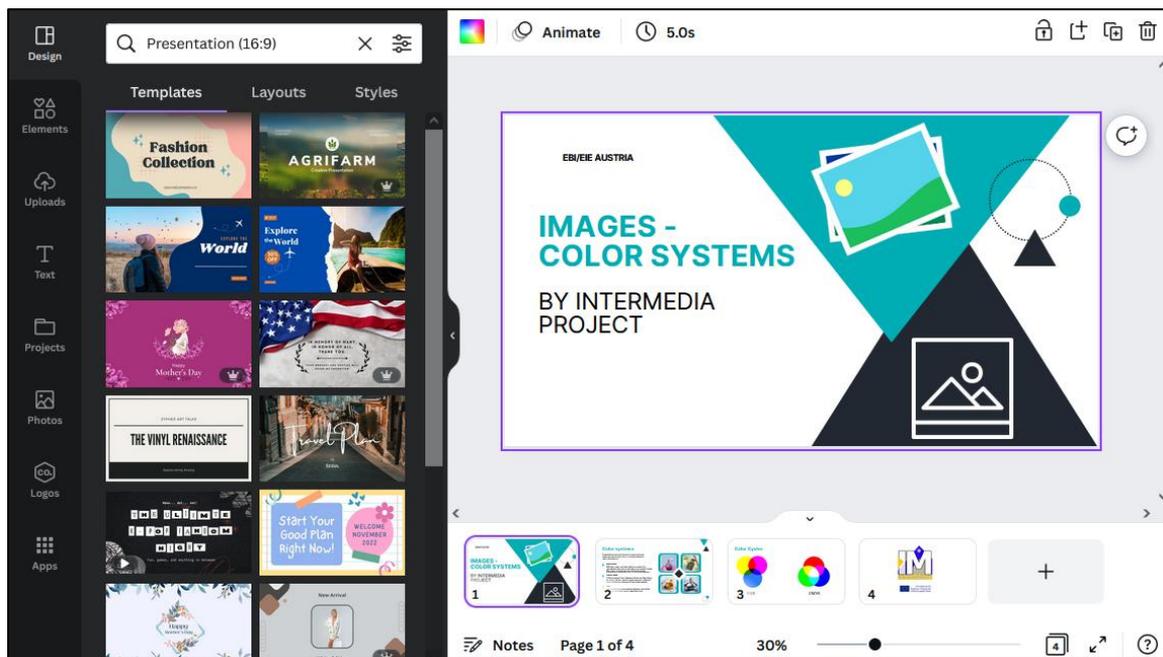


Image 13: Screenshot from work on the presentation of Image Color Systems.

Comment

CANVA is an excellent tool for the purposes mentioned above. Starting with CANVA is simple, the user interface is clear and logical. You will reach the first successful output quickly.

Hint: Basically (except for presentations) CANVA's outputs are no active learning content. Nevertheless, the outputs are at a high level and can be made to active resources in the frame of assignments.

[3] eXe-Learning

The eLearning XHTML¹² editor (eXe) is an authoring environment to assist teachers and academics in the design, development, and publishing of web-based learning.

Link: [eXe-Learning](#)

Description

eXe-Learning is an open-source authoring application that allows users to create interactive and multimedia-rich learning content. Some advantages of eXe-Learning include:

- **Cross-platform compatibility:**
You must install eXe-Learning locally (it is available as a portable tool running from a USB pen drive). eXe-Learning can be used on multiple operating systems, including Windows, Mac, and Linux.
- **Easy to use**
eXe-Learning has a user-friendly interface that makes it easy for users to create and edit multimedia content, without requiring advanced technical skills.
- **Accessible**
eXe-Learning creates web-based content, which can be accessed by anyone with an internet connection, making it ideal for distance and online learning.
- **Customizable**
eXe-Learning allows users to customize their content with a wide range of templates, styles, and themes, making it easy to create visually appealing and professional-looking learning materials.
- **Interactivity**
eXe-Learning allows you to add interactive elements such as Quizzes, Flashcards, and Drag-n-Drop activities to create engaging and interactive content.
- **Accessibility**
eXe-Learning can create accessible content that is compliant with the standards of accessibility (WCAG¹³, ATAG¹⁴)

Overall, eXe-Learning is a valuable tool for creating interactive and multimedia-rich learning content that is easy to use, cross-platform compatible, and customizable. It also helps to create accessible content that can be shared and collaborated on by multiple users.

¹² XHTML (Extensible Hypertext Markup Language) is a stricter and cleaner version of HTML that follows XML syntax rules, allowing for greater compatibility with XML-based systems and promoting well-formed and structured web documents.

¹³ WCAG (Web Content Accessibility Guidelines) is a set of international standards that provide guidance and criteria for making web content more accessible to people with disabilities, ensuring equal access and usability for all users.

¹⁴ ATAG (Authoring Tool Accessibility Guidelines) is a set of guidelines that provides recommendations for making software tools and content authoring applications accessible, enabling individuals with disabilities to create and edit web content in an inclusive manner.

Comment

eXe-Learning can be used to create complete learning & training courses. Into these courses, you can insert CANVA content or H5P content as well.

You can insert eXe-Learning content easily into MOODLE¹⁵ courses (by simple export to SCORM¹⁶ and inserting the SCORM package into the MOODLE course). Implementation into WordPress needs a webspace where the eXe-Learning content is hosted. With this precondition, you can insert the content into a WordPress page via iFrame¹⁷.

[4] HTML-Validator

An HTML¹⁸ validator is a quality assurance program that checks HyperText Markup Language (HTML) markup elements for syntax errors. This is an excellent tool for experienced users.

Link: [HTML-Validator](#)

Description

This tool is only of interest for people with a technical background who want to know if the developed HTML pages fit to the standard definitions given by the W3 Consortium.

Comment

We did not find any direct educational use for this tool.

[5] Padlet

With the online tool Padlet, Trainers and their learners can compose content and notes on a digital pin board, independent of time and place.

Link: [Padlet](#)

Description

Padlet is a web-based tool that allows users to create and share interactive bulletin boards. It can be used in various ways in the classroom, including:

- **Collaborative learning**
Padlet can be used as a platform for collaborative learning activities, such as group brainstorming and group discussions. Students can share ideas, resources, and feedback with each other in real-time.
- **Interactive presentations**
Padlet can be used to create interactive presentations, allowing students to engage with the material in a more dynamic way.

¹⁵ Moodle is an open-source learning management system (LMS) that facilitates the creation, management, and delivery of online courses, providing a virtual learning environment for educational institutions and organizations.

¹⁶ SCORM (Sharable Content Object Reference Model) is a set of technical standards that enables interoperability between e-learning content and learning management systems (LMS), allowing for the creation and tracking of online learning activities and assessments across different platforms.

¹⁷ An iFrame (Inline Frame) is an HTML element that allows embedding one web page within another, enabling the display of external content seamlessly within a host web page.

¹⁸ HTML (Hypertext Markup Language) is a standard markup language used for creating the structure and formatting of web pages, allowing for the presentation of text, images, links, and various multimedia elements on the internet.

- **Digital storytelling**
Padlet can be used as a platform for digital storytelling, allowing students to create multimedia-rich narratives, such as posters, videos, and podcasts.
- **Interactive quizzes**
Padlet can be used to create interactive quizzes, flashcards, and other types of assessments; this can be useful for formative assessment and self-evaluation.
- **Course management**
Padlet can be used to create online bulletin boards for training announcements, assignments, and resources.
- **Flexibility**
Padlet can be accessed from any device with an internet connection, this allows for flexibility in terms of time, place, and pace of learning.

Overall, Padlet is a versatile and user-friendly tool that can be used in a variety of ways in the classroom to support collaborative learning, interactive presentations, digital storytelling, formative assessment, and classroom management. Its flexibility in terms of device and access makes it a valuable tool in today's classroom.

Comment

Padlet is an excellent interactive tool for learners' cooperation. Learners can add content, answer questions, or contribute to creating a joint content (in a group).

Hint: The use of Padlet is restricted to 5 boards (in the free version). Nevertheless, you can use several accounts (for specific purposes) and insert the relevant content individually in your courses or training.

Basically, (static Padlet = set to read-only) are reusable content, but not interactive)

[6] The H5P Framework

This tool aims to make it easy for everyone to create, share and reuse interactive HTML5¹⁹ content. Interactive videos, interactive presentations, quizzes, and interactive timelines.

Link: [The H5P Framework](#)

Description

This is the most versatile framework currently available. It can be used as a plugin on WordPress and is a fixed part of the MOODLE Server (since version 3.11). The tool offers several modules that enable the creation of multimedia-based and interactive content in a simple way. Created content is reusable and can be downloaded and uploaded again.

- **Interactive videos**
H5P allows users to create interactive videos, which can include elements such as quizzes, hotspots, and branching scenarios.
This feature works with overlays:

¹⁹ HTML5 is the latest version of the Hypertext Markup Language, providing enhanced capabilities and features for structuring and presenting content on the web, including native support for multimedia elements and improved support for interactivity and mobile devices.

- You may upload (or link a video from YouTube). This is the basic video for the overlay.
 - You use the timeline of the video to create an overlay at this position. The overlay can contain most of the available elements of H5P.
 - Finally, the setting of the behaviour of the overlay is defined.
- **Interactive presentations**

H5P allows users to create interactive presentations, including slide shows, timelines, and interactive images. It is HTML5-based presentation content which allows course creators to add multiple choice questions, fill in the blanks, text, and other types of interactions to their presentations using only a web browser. Additionally, you can insert Course Presentation in typical applications, like Moodle and WordPress.
 - **Quizzes and surveys**

H5P allow users to create quizzes and surveys, including multiple-choice questions, true/false questions, and fill-in-the-blank questions.
 - **Agamotto²⁰**

This H5P content type that enables to compare and explore a sequence of images interactively. Authors can decide to add a short explanatory text for each image. Basically, it is an Image Blender (Agamotto) and can be integrated in various systems, for example, Moodle and WordPress.

Hint: You can create simulations with this tool and display changes in systems directed with a simple slider.
 - **Column**

This HTML5-based content enables to combine several other H5P content in one content element. This makes the integration of content into a webpage simpler.
 - **Crossword**

This content element enables to create crosswords in a simple way. The crossword can be enhanced by (optional) audio or video clues.
 - **Interactive images**

H5P allows users to create interactive images, including image hotspots, image jigsaw puzzles, and image matching games.
 - **Drag the words**

This HTML5-based question type allowing creatives to implement text-based challenges where users are to drag words into blanks in sentences. The tool is excellent for language learning or training among. You also may use it for formative assessment of specific definitions (given in former lessons) or to test the correct use of specific terms in a given context.
 - **Accessibility**

H5P makes it easy to create accessible content, which can be used by people with disabilities, and it is compliant with accessibility standards.

²⁰ Agamotto is a fictional character and artifact in Marvel Comics, associated with Doctor Strange, possessing the power to manipulate time and see into alternate realities.

- **Compatibility**

H5P is a cross-platform compatible framework, which means it can be integrated with various Learning Management Systems, Content Management Systems and websites.

Comment

We used the framework extensively and can recommend the tool in any case. Here is a short overview of PROS and CONS.

Pros	Cons
<ul style="list-style-type: none"> • Offers a wide range of interactive content types that can be easily created and integrated into web-based learning materials. • Content is HTML5 compatible. • Provides a flexible and customizable framework that can be used with various learning management systems, content management systems, and web publishing platforms. • Offers a user-friendly and intuitive interface that requires no programming skills or technical and expertise. • Supports the creation of accessible and responsive content that can be accessed on different devices and platforms. • Provides detailed analytics and user feedback that can be used to improve the effectiveness of learning materials. 	<ul style="list-style-type: none"> • Some users may find the range of content types to be limited or not suitable for their specific needs. • H5P is a web-based framework, so content creation requires a reliable internet connection and a host application (cannot be displayed directly in an Internet Browser). • Some of the more advanced features of H5P, such as branching scenarios, may require additional technical skills or support. • The use of H5P content types may be restricted by copyright or intellectual property laws, depending on the source of the media used. • The content created using H5P may not be as visually or functionally rich as content created using other tools, such as multimedia authoring software.

[7] PowToon

This eTool creates animated videos for personal, educational, or business/professional use.

Link: [PowToon](#)

Description

PowToon is a cloud-based software that allows users to create animated videos and presentations. It offers a wide variety of customizable templates, characters, and objects that can be easily dragged and dropped into the project. PowToon also provides a user-friendly interface and a library of royalty-free music and sound effects. It can be used for educational, marketing, or entertainment purposes.

Videos can easily be uploaded to YouTube (into an existing user account).

Comment

In the free version, you cannot download the video (currently, 2023). We did it by uploading to YouTube and downloaded it from there.

[8] ThingLink

This web-based program enables the creation of interactive graphic material by creating multiple “hot spots” on specific parts of an image and turning that image into a multimedia launcher.

Link: [ThingLink](#)

Description

ThingLink is an interactive media platform that enables users to create engaging visual experiences. It allows users to enhance images and videos with clickable tags and embeddable content such as links, videos, and audio. ThingLink can be used for educational, marketing, or personal purposes to create interactive infographics, virtual tours, and interactive maps. The platform also provides analytics to track engagement and monitor the performance of interactive content. ThingLink can be accessed via a web browser, mobile app, or by embedding content into a website or blog.

Comment

Due to the policy, we didn’t use ThingLink (Effective work is possible in the pay version only). Nevertheless, we have compiled a short list of PROS and CONS

Pros	Cons
<ul style="list-style-type: none"> • Provides a way to make images and videos more interactive and engaging. • Offers a wide range of possibilities for creating interactive content, such as infographics, maps, and virtual tours. • Easy to use, even for those with limited technical expertise. • Offers detailed analytics to track engagement and monitor the performance of interactive content. • Can be accessed from a web browser, mobile app, or embedded into a website or blog. 	<ul style="list-style-type: none"> • The free version of ThingLink has some limitations, such as a maximum number of interactive images and limited access to analytics. • The platform's reliance on third-party integrations for certain features, such as social media sharing, may cause some compatibility issues. • Creating high-quality interactive content can be time-consuming and require a significant investment of resources. • Some users may find the cost of a premium subscription to be prohibitive, depending on their budget and needs.

[9] W3Schools

W3school is an educational online website for learning to code. It offers description and examples for almost all situations in coding or use of page description texts.

Link: [W3Schools](https://www.w3schools.com/)

Comment

We did not find any direct educational use for this tool. It is useful for people who use the text interface in WordPress or MOODLE to insert specific codes for content design.

3. ANALYSIS OF POSSIBLE PLATFORMS

In this section, we will explore how to use Learning management systems plugins on WordPress to create and deliver online courses.

The first step is to install the selected plugin on your WordPress website.

We have selected 4 plugins (Masteriyo, LearnPress, Tutor LSM and LifterLMS) as they are all free (or at least they offer an interesting free version) and straightforward to use.

For each plugin, we have carried out an analysis on two main aspects: the features regarding the content creation and the administration and management of the courses.

Our main findings and comments are summarized in this infographic:



LMS PLUGINS FOR WORDPRESS

● ○ ●

☰

Despite its simple use, we do not recommend it as it does not meet all specifications, there are no templates and does not provide short-keys for WordPress.

● ○ ●

☰

It is a very complete tool. We recommend it as it offers high-quality options, meets many specifications, and its templates can be personalized and linked to WordPress. Backoffice management requires time.

● ○ ●

☰

We do not recommend it as the basic version does not provide special features. It is easy to use and provides a good working environment but a full good experience is only granted by paying for the pro version.

● ○ ●

☰

We recommend it as its free version is easy to use, guarantees good quality, and allows to sell courses. Not all content is free but the premium version is affordable.

Graphik 2: Info Sheet describing the evaluated LMS (Source: EuphoriaNet)

3.1. Masteriyo

Masteriyo is a WordPress learning platform plugin that enables users to create and manage online courses, quizzes, and exams on their WordPress website. The plugin provides a range of features to help users create and deliver engaging and interactive e-learning content, including customizable course layouts, multimedia support, progress tracking, and certificates of completion.

Masteriyo also includes a range of assessment tools, such as multiple-choice quizzes and timed exams, to help users evaluate and measure the progress of their learners. The plugin is designed to be user-friendly and easy to use, even for those with little or no technical experience. Overall, Masteriyo is a powerful tool for anyone looking to create and manage online courses on their WordPress website.

How to use it

In the dashboard, Masteriyo provides several menu items to handle courses.

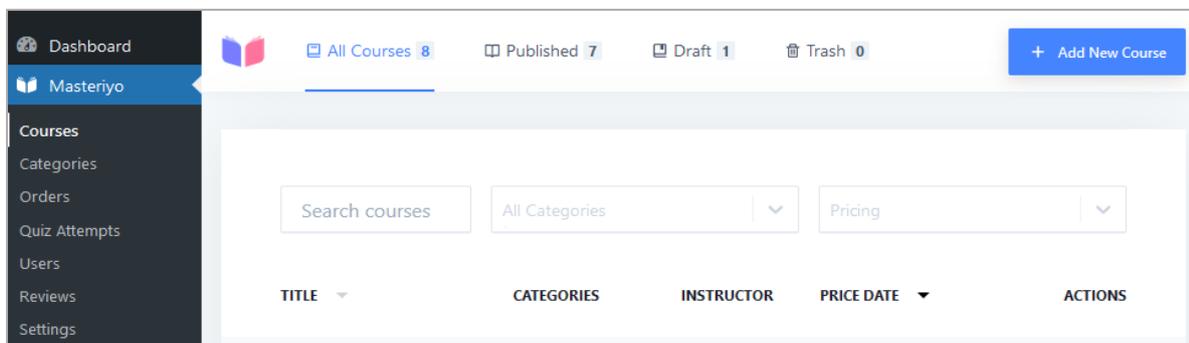


Figure 1: Masteriyo access via WordPress's Dashboard

You select the button “New course” and get the form for the basic settings and information of the course.

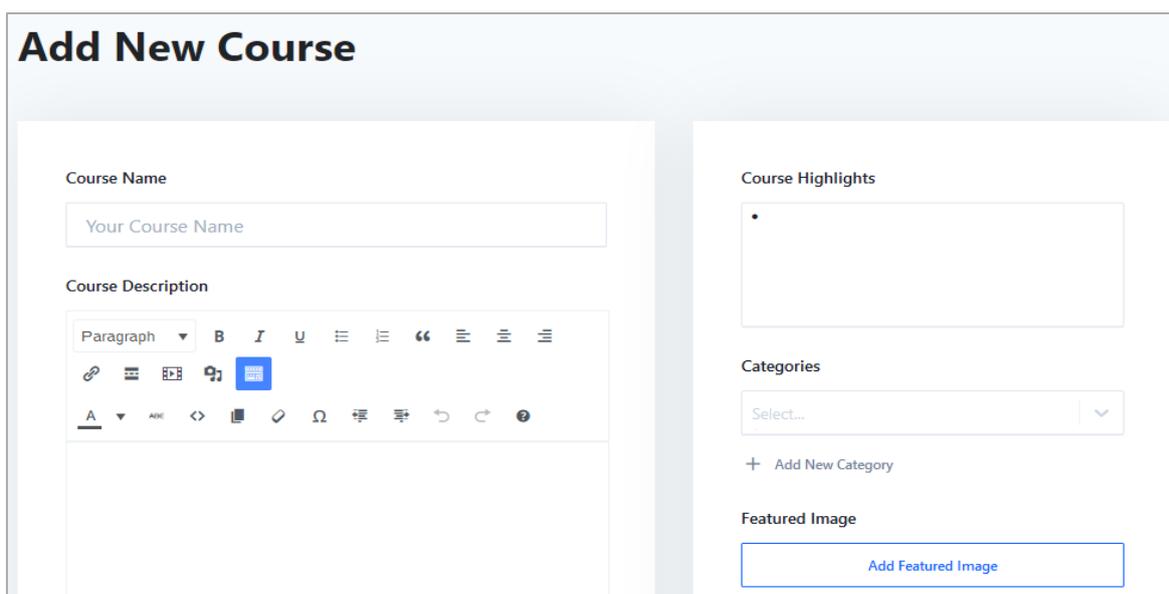


Figure 2: Masteriyo - form to insert the course description. Please care for the featured image (this is displayed in the courses overview).

Here you fill in the course name (top), and a short course description (left bottom) and you enhance the information with some major elements of the course (upper-right corner). The featured image gives the learner depicted information about the course.

The next step is to use the builder to insert the content. This tool helps the course creator to insert content. This content is organized into **Sections**, each section may contain several content elements.

- **Sections**

Give the course the structure

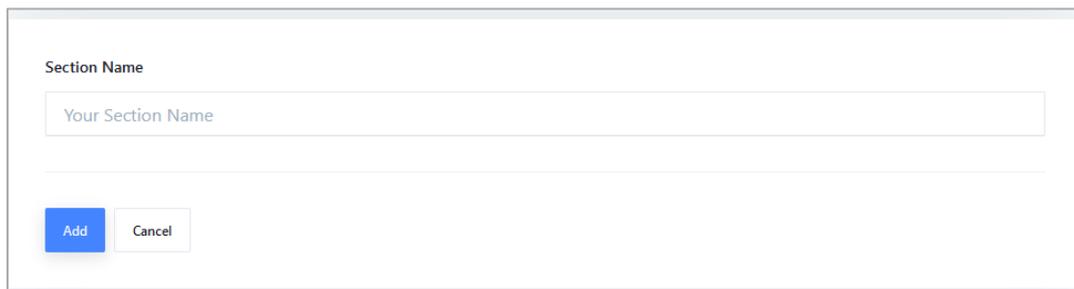


Figure 3: Example of the section form

- **Content**

Masteriyo provides simple pages - like WordPress pages - as the carrier of the information. In content pages, you can mix text with multimedia-based content (the inserting of multimedia items works with iFrames only).

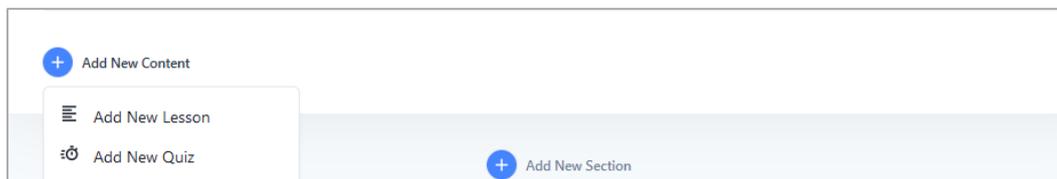


Figure 4: Example for adding new content

- **Quiz (or Questionnaire)**

You may select the type of content: In the free version, lessons or questions are available only.

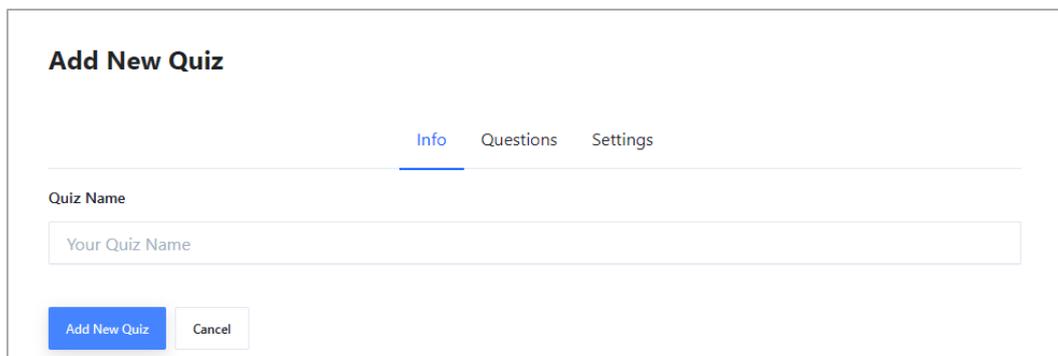


Figure 5: Form to create a new quiz

Selecting a new quiz, you provide information about the quiz. Then you select the questions. The free version is restricted to true-False questions, single-choice, and multiple-choice questions only.

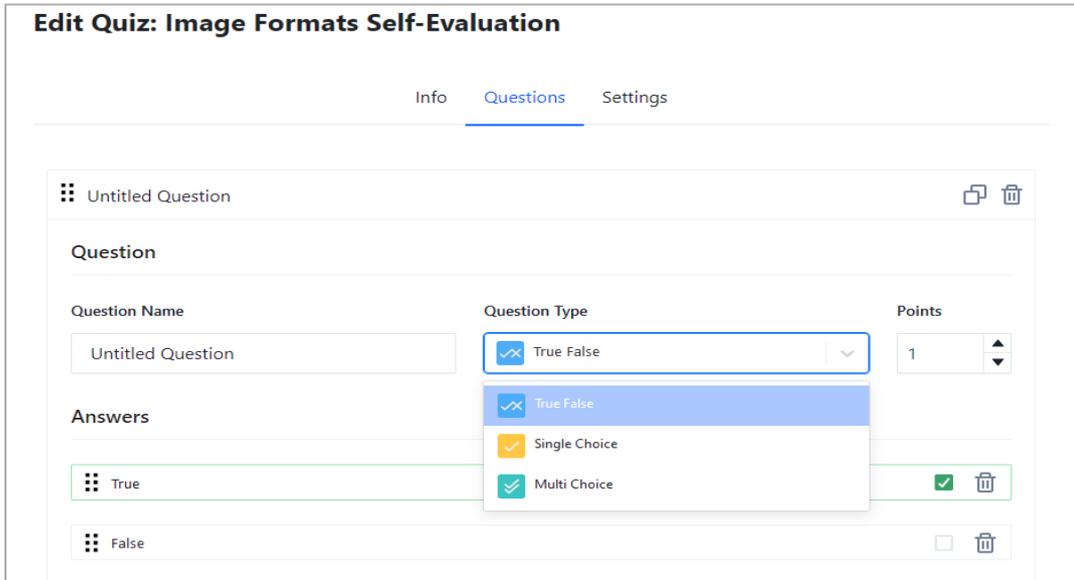


Figure 6: Form to insert a question into a lesson.

Various settings of the question enable the evaluation of the answers given by the learner.

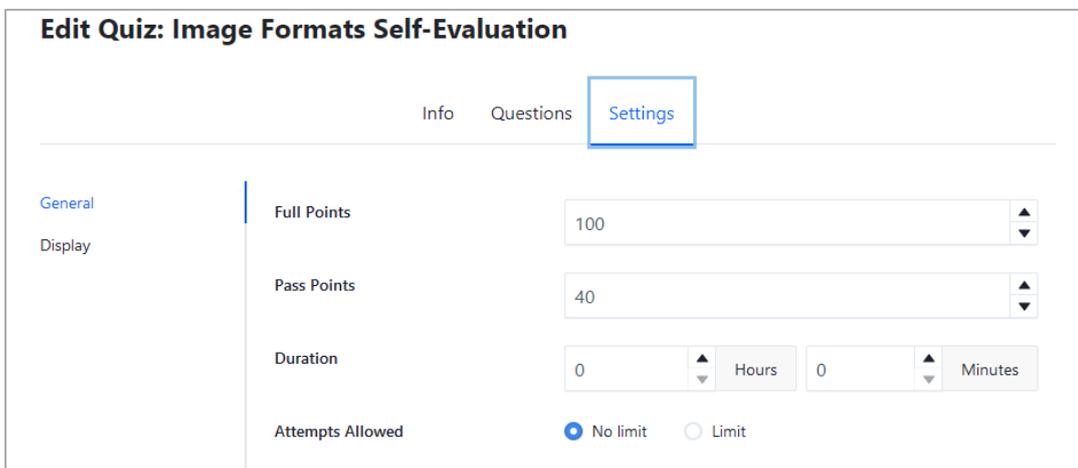
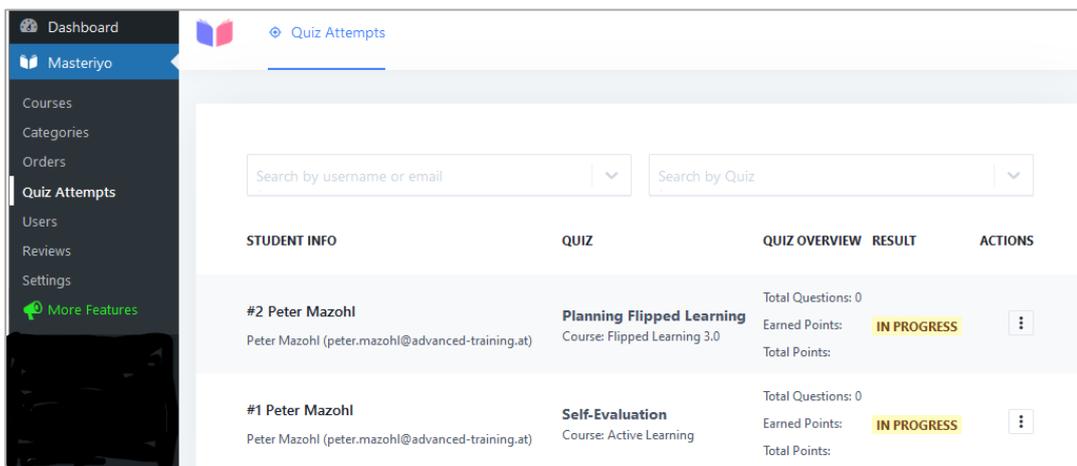


Figure 7: Question settings example

Quiz evaluation is done centralized (from the dashboard menu).



Questionnaire for this plug-in

Content creation

	Yes	Restricted	No
The course pages support short keys [wp-key]	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Videos can be inserted	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
Canva's content can be inserted (iFrame)	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
H5P can be inserted (iFrame)	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
H5P can be inserted directly from WP	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>
Animaker can be inserted (iFrame)	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
Additional structuring of text is possible with the Shortcodes Ultimate Plugin	<input type="radio"/>	<input type="radio"/>	<input checked="" type="checkbox"/>

Course fees are possible) (Explain why we ask)	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
---	-------------------------------------	-----------------------	-----------------------

Course creation is supported by an “assistant”

Strongly agree Partly Agree Disagree Strongly Disagree

Courses can be adapted, for example different target groups, easily

Strongly agree Partly Agree Disagree Strongly Disagree

Courses can be amended easily

Strongly agree Partly Agree Disagree Strongly Disagree

More than one course creator can work in the course development

Strongly agree

Partly Agree

Disagree

Strongly Disagree

Courses and administration

There exists the possibility to give a clear description for each course (in the course overview of the platform)

Yes No

Courses of different course creators are visible to all enrolled participants

Yes No

Participants must enroll to attend a course

Yes No

Enrollment of participants is easy

Strongly agree

Partly Agree

Disagree

Strongly Disagree

The user interface is clear for basic users (or newbies in working with learning platforms)

Strongly agree

Partly Agree

Disagree

Strongly Disagree

3.2. LearnPress

LearnPress is a WordPress learning platform plugin that allows users to create and manage online courses on their WordPress website. The plugin provides a range of features to help users create and deliver engaging and interactive e-learning content, including course creation tools, multimedia support, quiz and assignment creation tools, and customizable course layouts.

LearnPress also includes a range of assessment tools, such as quizzes and assignments, to help users evaluate and measure the progress of their learners. The plugin is designed to be user-friendly and easy to use, even for those with little or no technical experience. Overall, LearnPress is a flexible and powerful tool for anyone looking to create and manage online courses on their WordPress website.

How to use it

After having installed LearnPress, you must activate the plugin on your WordPress website. Once activated, you can create new courses and add content, such as lessons, quizzes, and assignments. You can also customize the course layout and design and set up payment options for paid courses. LearnPress provides a user-friendly interface for managing courses and tracking learner progress and allows you to export data and reports for analysis.

Here are some specific features:

- **Quick personalization**

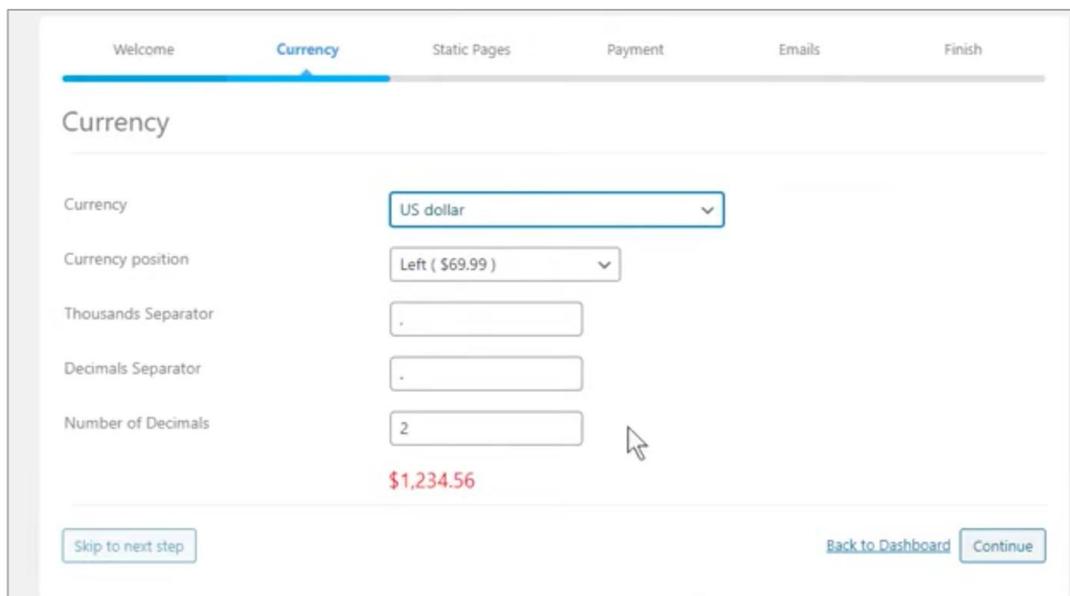


Figure 8: Prepare for your needs (example). Insert currency (for payment training).

After welcoming you to Learn Press. Here you can choose the currency you want to establish for the course.

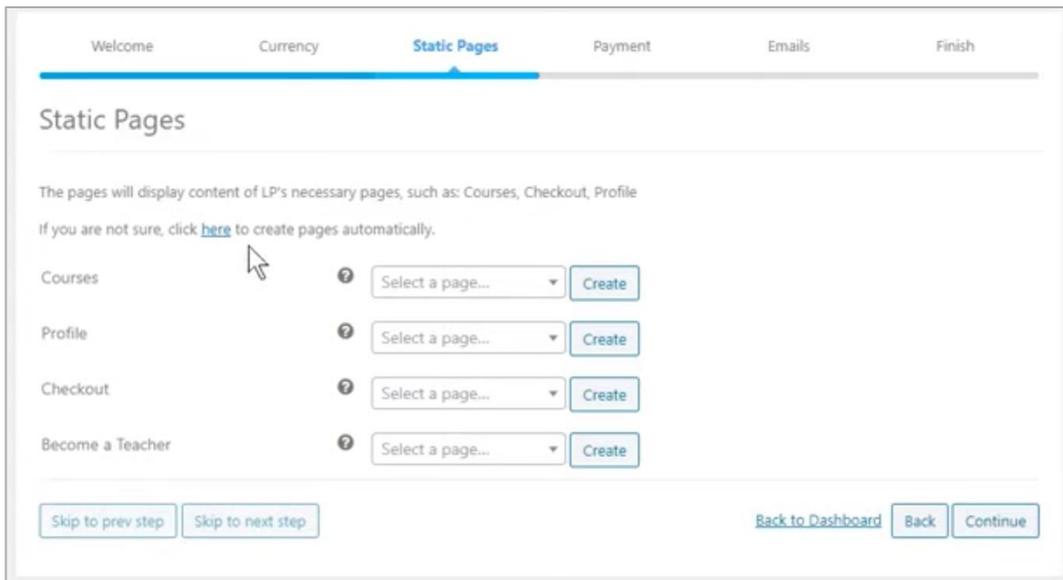


Figure 9: Here you can choose the default pages that will appear on the course.

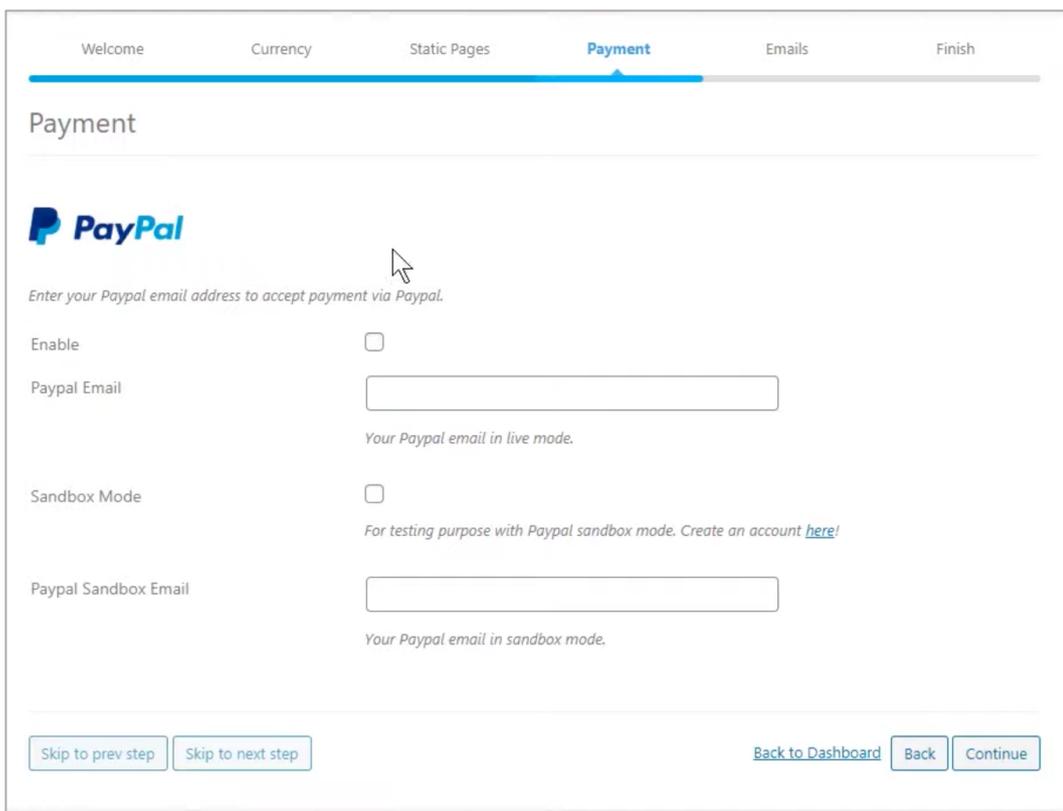


Figure 10: This version will allow you to set a payment method for your course.

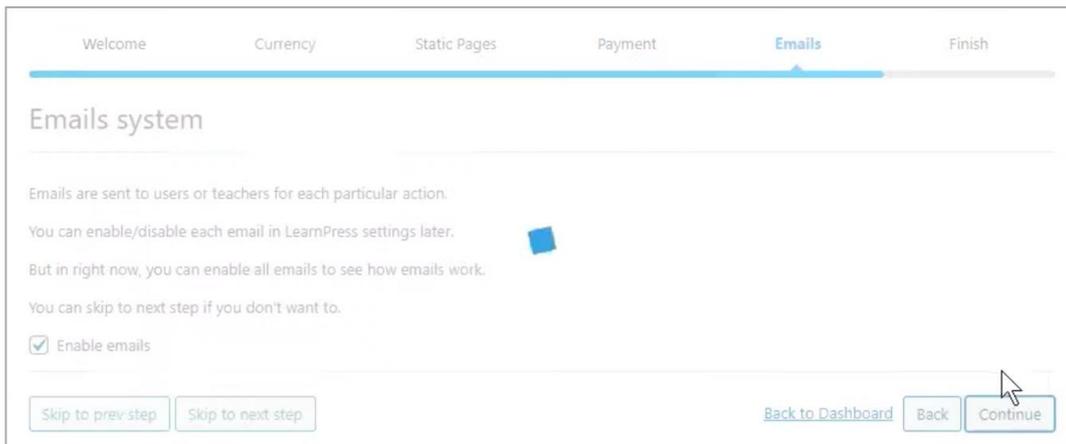


Figure 11: Communication between learners is possible.

It will also let you add an email system, so information can be exchanged between users and teachers.

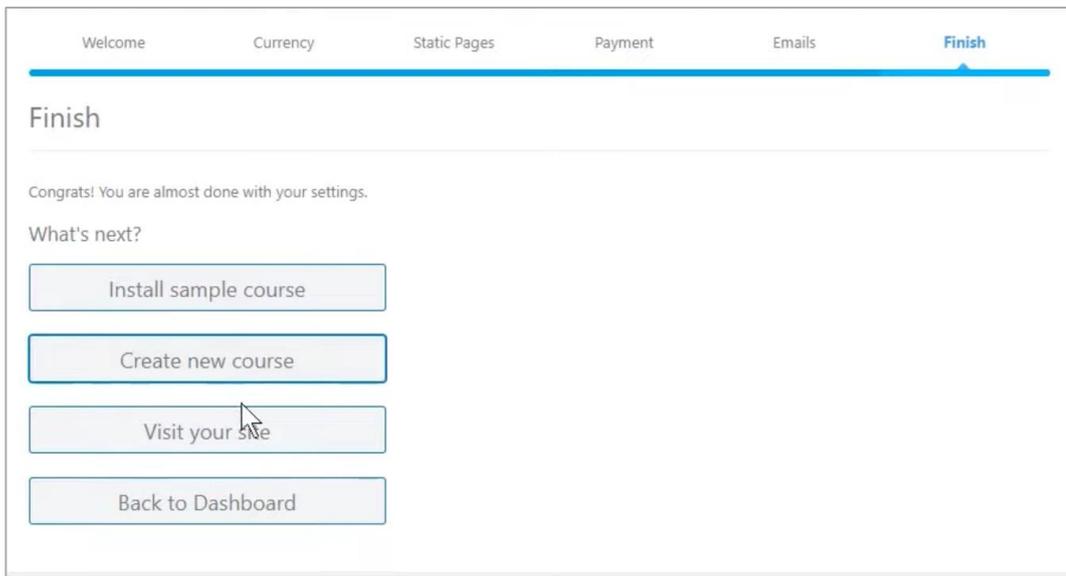


Figure 12: Completing the instal process.

After selecting all these options, it will give you the option to create a new course, install a sample course, visit your site and go back to the dashboard. Once we are ready to create a course we will press: “create new course”.

- Create new courses

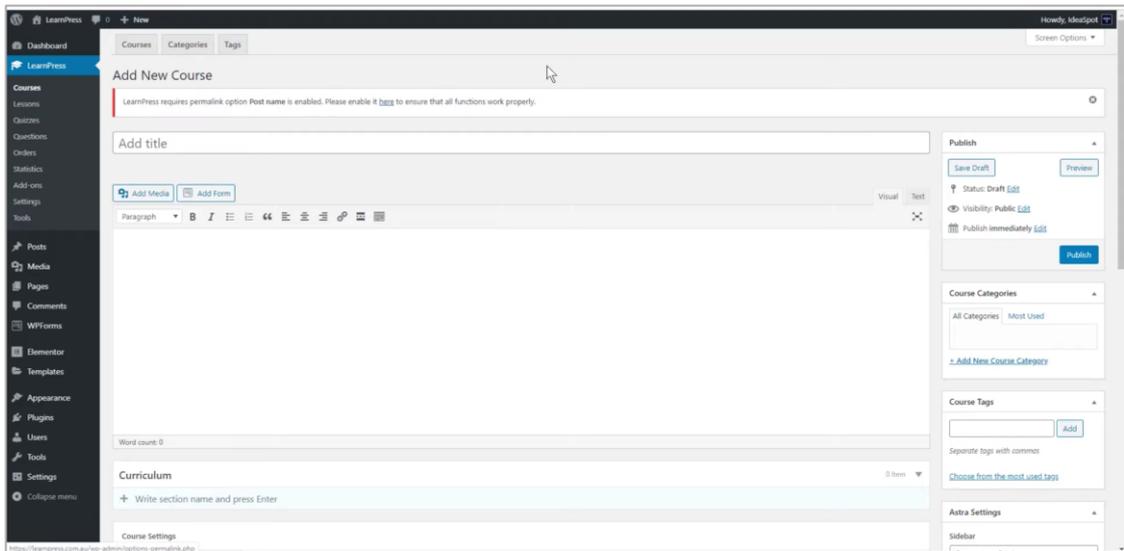


Figure 13: Create a new course (Course title and description)

This is the main page for the creation of the course, where you will add a new course, adding a title, categories, etc.

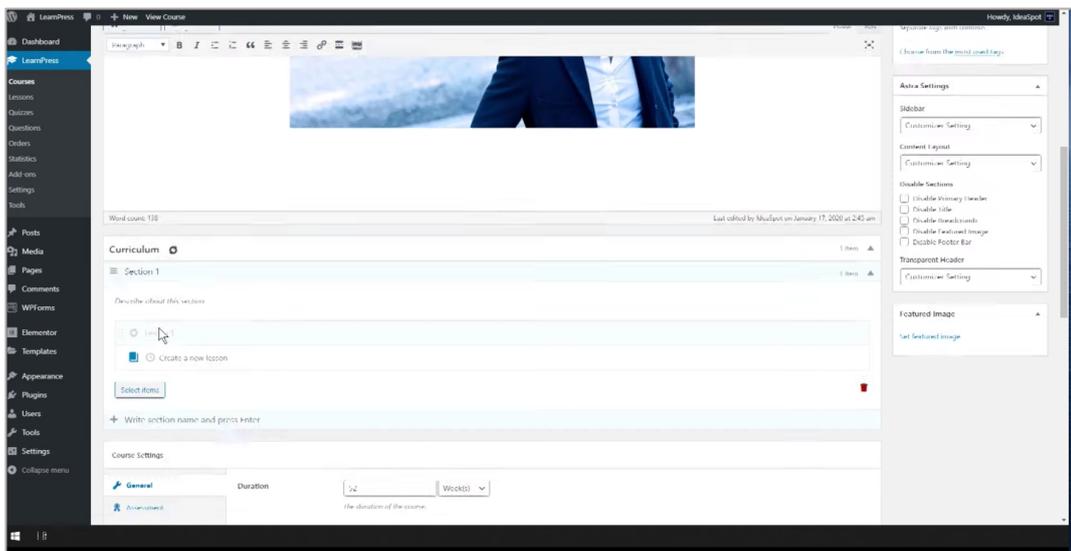


Figure 14: Define a curriculum

It will allow us to go into the curriculum, where we will be able to include the different sections of the course.

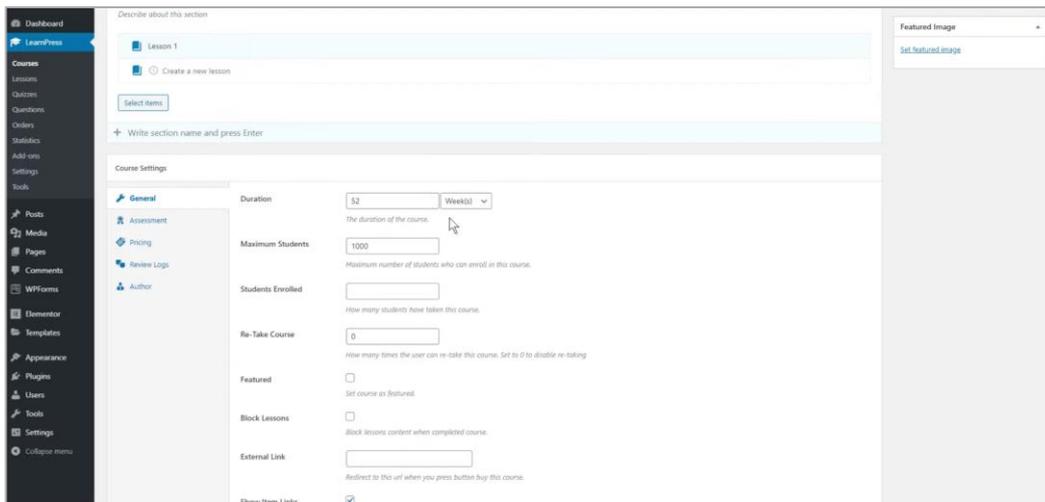


Figure 15: Specific settings of a course.

Here you will be able to create the settings of this course, selecting duration, number of students, etc.

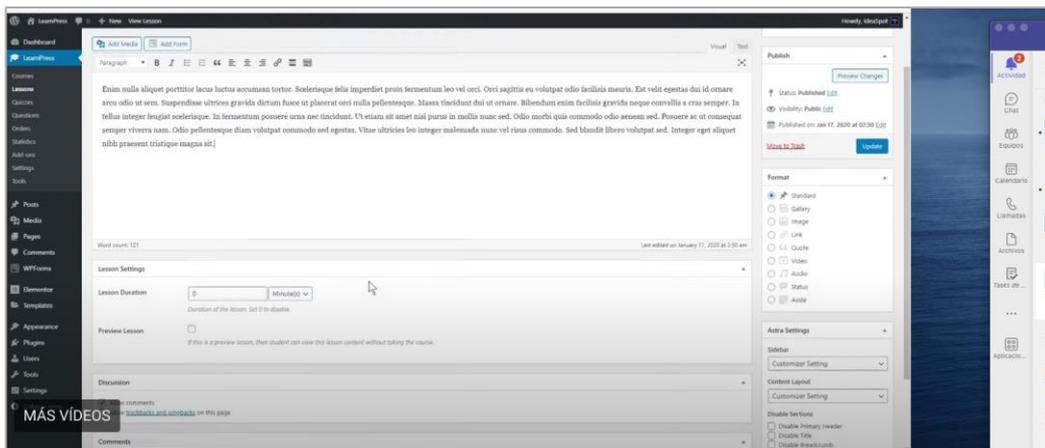


Figure 16: Additional parameters and settings of a course

Here you will add the content of the lesson as well as deadlines, lesson settings and feedbacks.

- Quiz creation and edition

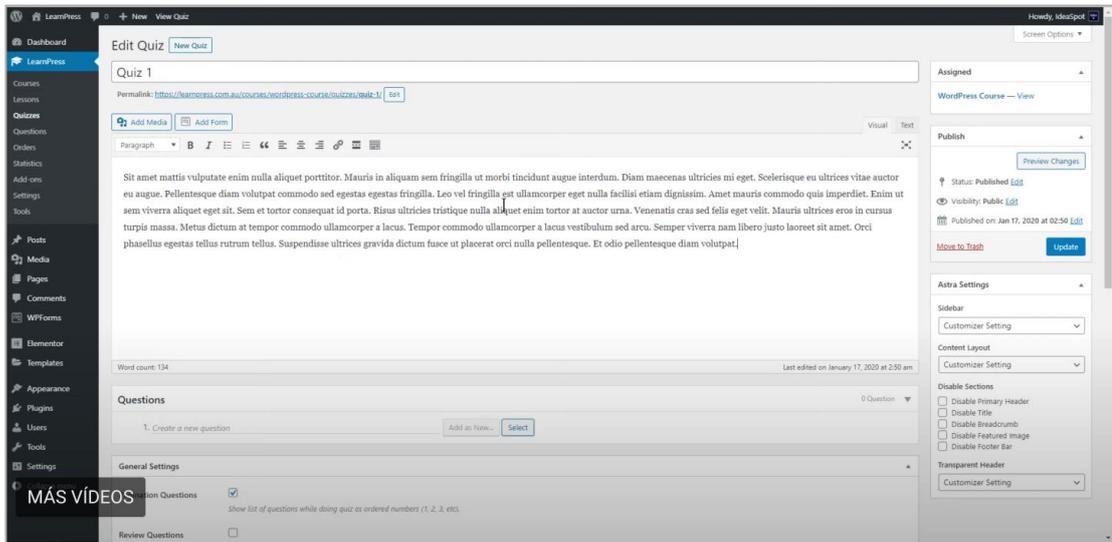


Figure 17: Create specific content - here a quiz (might be used for self-evaluation as well)

Here, you add and edit quizzes, adding the content, media, forms ... You will be able to create different questions regarding the content. You can create a quiz with the options: true or false, multiple answers and one single answer.

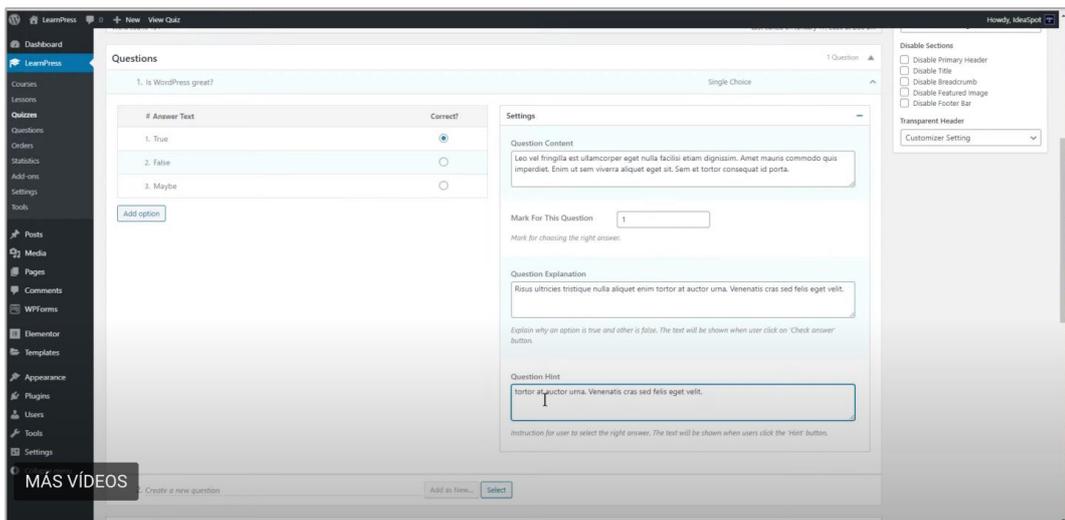


Figure 18: Building a quiz and inserting questions and answers.

Here is an example of how to create the questions, explanations, and hints for the quizzes. You can also edit the rules in terms of a measure of the success of the students, points, etc.

- **Results**

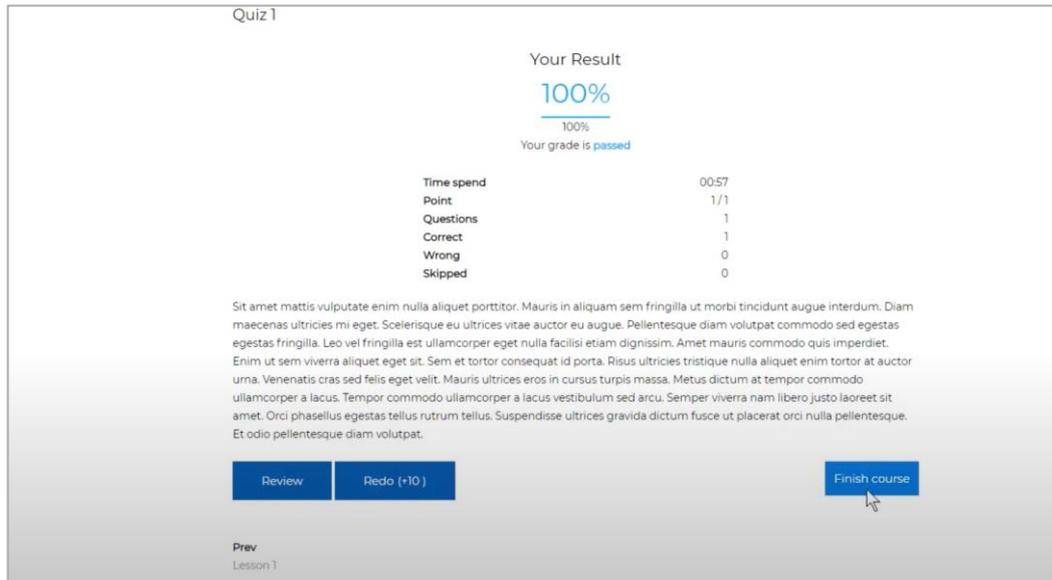


Figure 19: Summary of the quiz results.

This is an example of a questionnaire result, with time spent, correct and wrong answers and points.

Questionnaire for this plug-in

Content creation

	Yes	Restricted	No
The course pages support short keys [wp-key]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Videos can be inserted	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canva's content can be inserted (iFrame)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H5P can be inserted (iFrame)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H5P can be inserted directly from WP	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Animaker can be inserted (iFrame)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional structuring of text is possible with the Shortcodes Ultimate Plugin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Course fees are possible) (Explain why we ask)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Course creation is supported by an “assistant”

Strongly agree Partly Agree Disagree Strongly Disagree

Courses can be adapted, for example different target groups, easily

Strongly agree Partly Agree Disagree Strongly Disagree

Courses can be amended easily

Strongly agree Partly Agree Disagree Strongly Disagree

More than one course creator can work in the course development

Strongly agree Partly Agree Disagree Strongly Disagree

Courses and administration

Courses offered with the platform are displayed in an attractive way

Strongly agree Partly Agree Disagree Strongly Disagree

There exists the possibility to give a clear description for each course (in the course overview of the platform)

Strongly agree Partly Agree Disagree Strongly Disagree

Courses of different course creators are visible to all enrolled participants

Strongly agree Partly Agree Disagree Strongly Disagree

Participants must enroll to attend a course

Strongly agree Partly Agree Disagree Strongly Disagree

Enrollment of participants is easy

Strongly agree Partly Agree Disagree Strongly Disagree

The user interface is clear for basic users (or newbies in working with learning platforms)

Strongly agree Partly Agree Disagree Strongly Disagree

3.3. Tutor LMS

Short introduction and descriptions

Tutor LMS is a very complete WordPress LMS plugin to easily create and sell courses. You can create challenging and fun quizzes, interactive lessons, powerful reports, and statistics. A pro version with advanced functionalities is also available. Tutor is considered among the best free WordPress LMS plugins.

How to use it

The first step is to click on “Courses”. You will see the list of the courses already created and click on “Add new” you can start.

- **Create a new course.**

The first information you can provide is the title and a description, fix some settings like the maximum number of students, whether participants need to enroll or not and enable the Q & A section for your course. You can be even more specific by adding information on the learning objectives, target audience, duration of the course, requirements, materials, and resources, or you may add a video to show some more visual information on the course.

1. You can also set a featured image for the course to personalize it.
2. Then, you can start with the creation of your content.
3. You scroll down in the section “Course Builder” and click on “Add new topic”

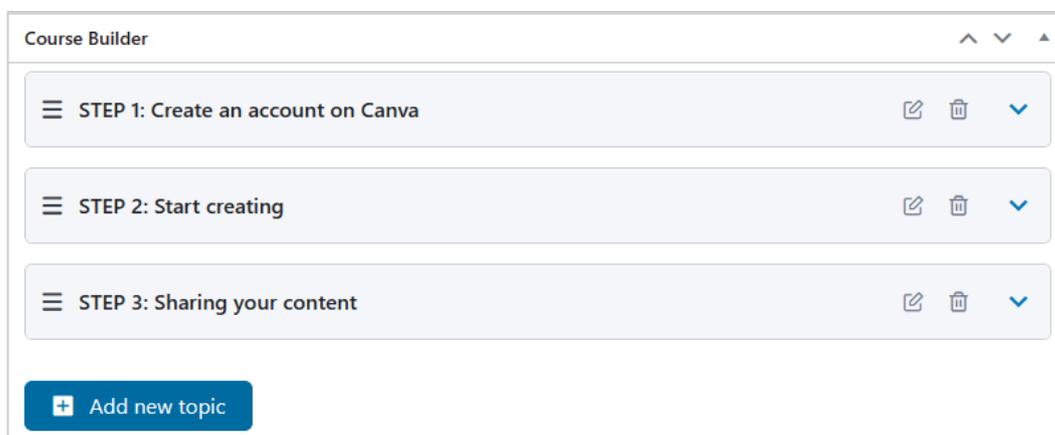


Figure 20: First view of the course builder

The “topic” is the title of the module or chapter. In this example, we have one course with three modules/chapters.

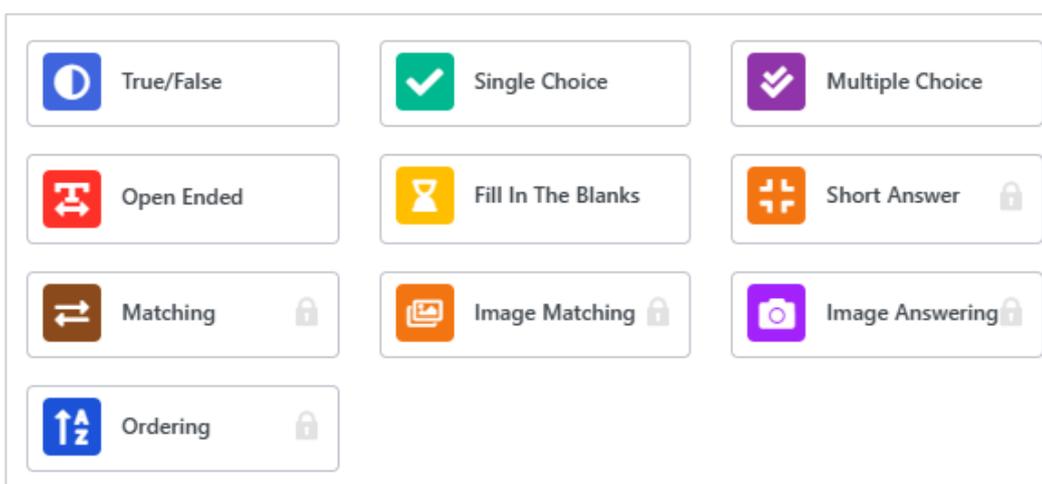


Figure 21: In the new created topic you can insert a lesson.

For each topic, you can add lessons and quizzes.

- **Various quizzes and tests**

As for the quizzes, you can see in the picture below the different options (some of them available only with the pro version):



It is interesting that you can add different settings, like points to your answers, randomize them and more.

As for the content, you will see that the building page is very similar to any WordPress website. Now let's discover the types of content you can add through the analysis carried out in the questionnaire below.

You will be able to see if such LMS is in line with the requirements of your future course.

Questionnaire for this plug-in

Content creation

	Yes	Restricted	No
The course pages support short keys [wp-key]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Videos can be inserted	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canva's content can be inserted (iFrame)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

H5P can be inserted (iFrame)	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
H5P can be inserted directly from WP	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
Animaker can be inserted (iFrame)	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
Additional structuring of text is possible with the Shortcodes Ultimate Plugin	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>

Course fees are possible	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
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Course creation is supported by an “assistant”

Strongly agree Partly Agree Disagree Strongly Disagree

Courses can be adapted, for example different target groups, easily

Strongly agree Partly Agree Disagree Strongly Disagree

Courses can be amended easily

Strongly agree Partly Agree Disagree Strongly Disagree

More than one course creator can work in the course development

Strongly agree Partly Agree Disagree Strongly Disagree

Courses and administration

Courses offered with the platform are displayed in an attractive way

Strongly agree Partly Agree Disagree Strongly Disagree

There exists the possibility to give a clear description for each course (in the course overview of the platform)

Strongly agree Partly Agree Disagree Strongly Disagree

Courses of different course creators are visible to all enrolled participants

Strongly agree Partly Agree Disagree Strongly Disagree

Participants must enroll to attend a course

Strongly agree Partly Agree* Disagree Strongly Disagree

*It depends on the setting of the courses.

Enrollment of participants is easy

Strongly agree Partly Agree Disagree Strongly Disagree

The user interface is clear for basic users (or newbies in working with learning platforms)

Strongly agree Partly Agree Disagree Strongly Disagree

3.4. LifterLMS

Short introduction and descriptions

LifterLMS is a popular WordPress plugin that allows users to create and sell online courses and memberships on their WordPress website. With LifterLMS, users can create engaging and interactive courses with features such as quizzes, assignments, and discussion forums.

The plugin also includes powerful e-commerce functionality that enables users to accept payments, set up subscriptions, and manage course access. LifterLMS offers a range of add-ons and integrations that can enhance the functionality of the plugin, making it a flexible solution for building and selling online courses. Most plugins are paid extensions.

Whether you're an educator, trainer, or entrepreneur, LifterLMS can help you create and deliver effective online learning experiences.

How to use it (step by step to start using it with screenshots)

1. Install and activate the LifterLMS plugin on your WordPress site.
2. Once the plugin is activated, navigate to the LifterLMS menu in the WordPress dashboard and select "Courses".
3. Click the "Add New Course" button to create a new course.

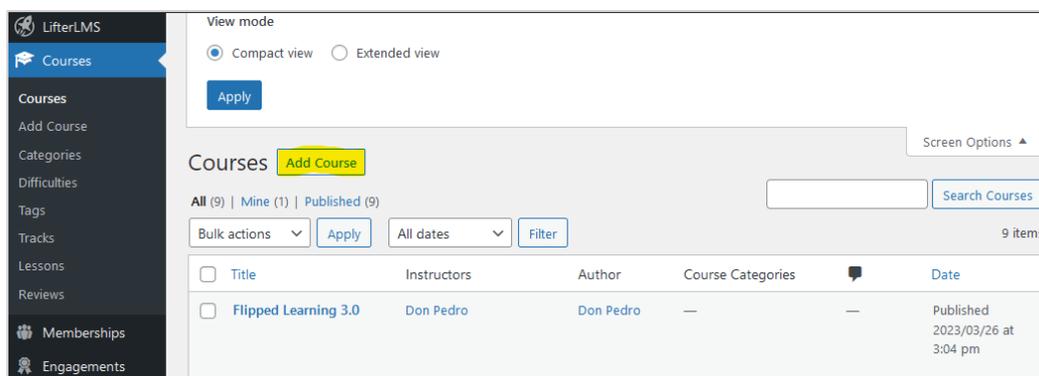


Figure 22: Select "Add Course" to create a new course.

- In the "Course Information" section, enter the course title and description.

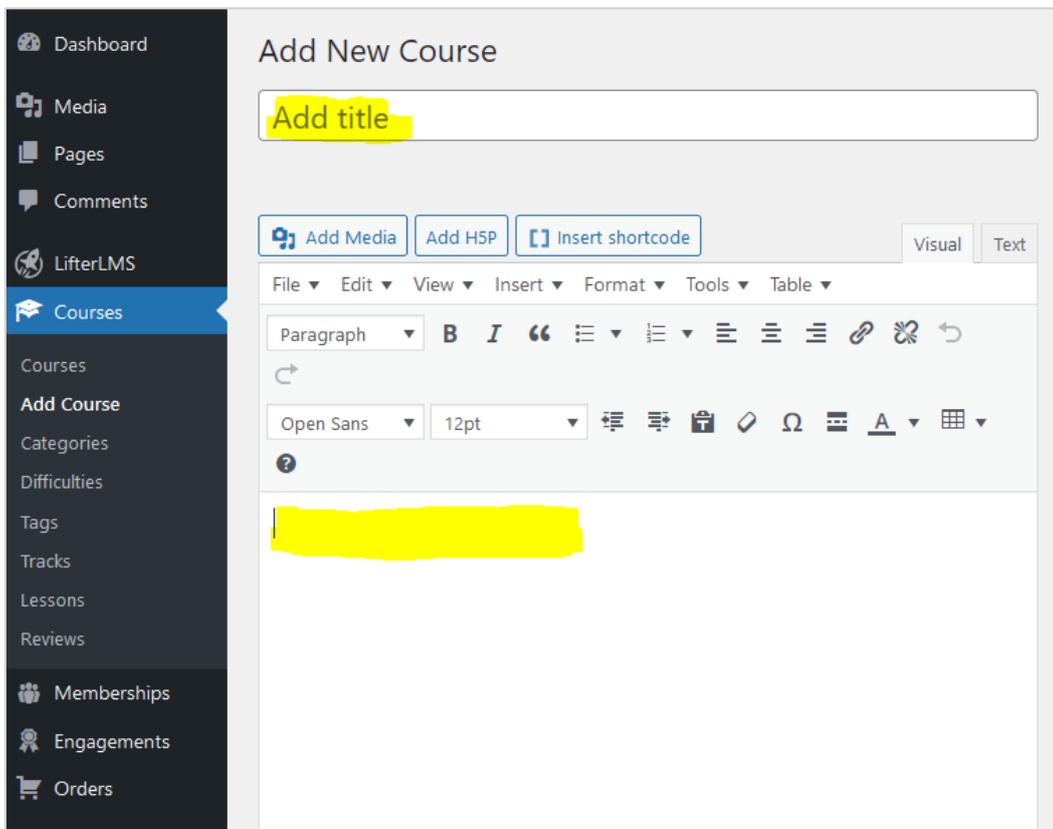


Figure 23: Enter an appealing course title and a well-done course description.

- Upload a featured image for the course, if desired.

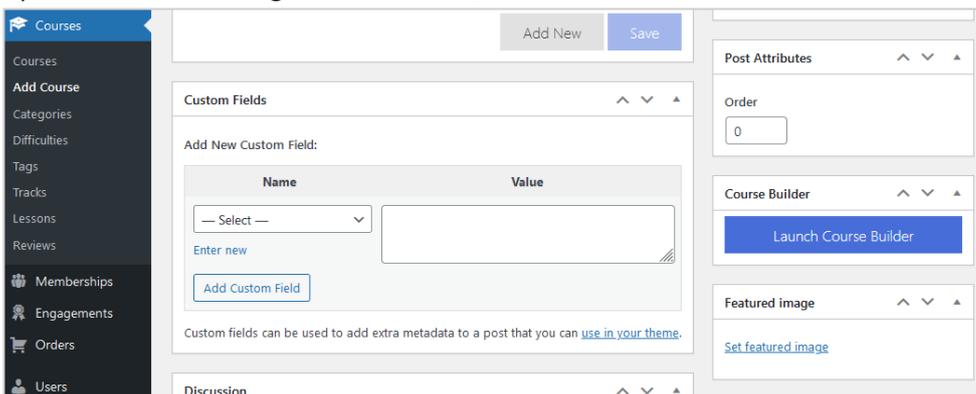


Figure 24: Insert the featured image for the course.

6. Use the “Builder” for creating your course content.

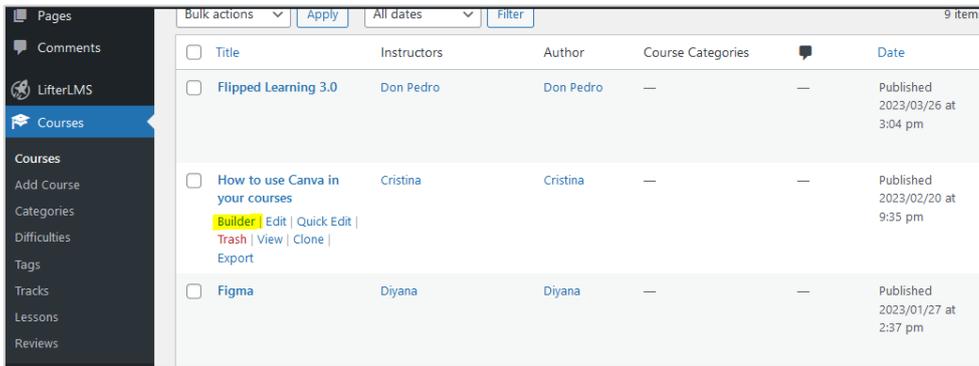


Figure 25: Select the new created course from the course list and start the "Builder".

7. Create the course structure in the builder and insert the lessons step by step. The basic structure is Section ⇒ Lesson of questionnaire.

- **Creating tests (or quizzes)**

You can add quizzes to each lesson. Select the “question mark” in the lesson item list.

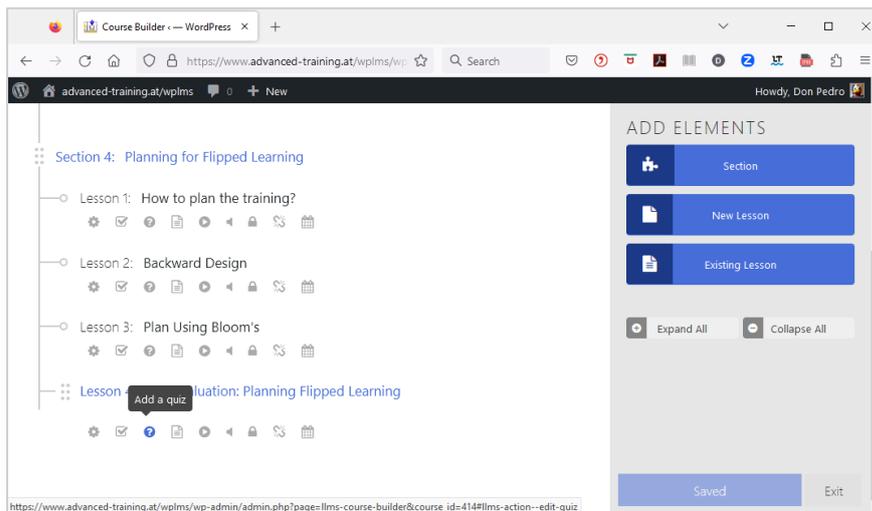


Figure 26: Selection of a new quiz in a lesson.

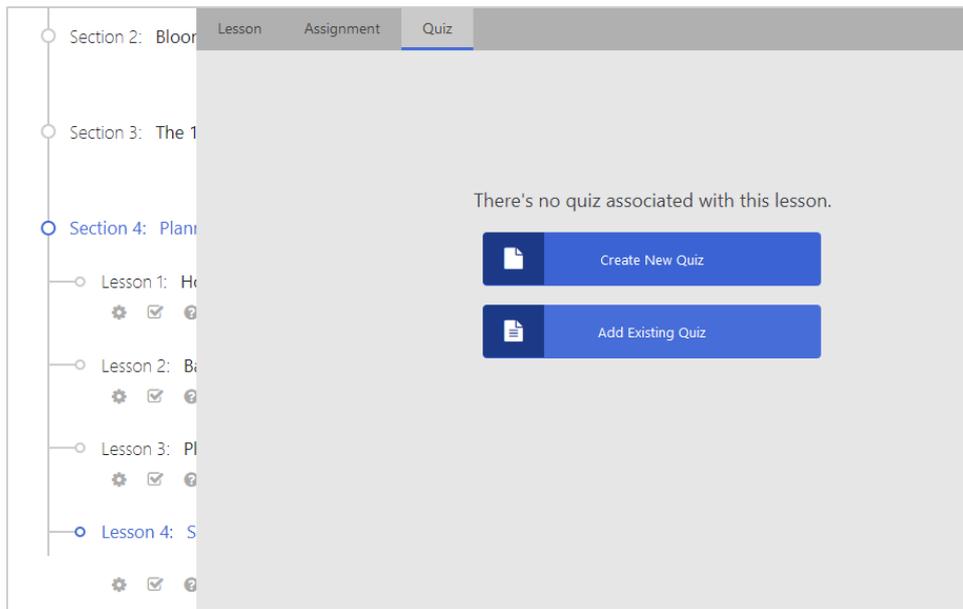


Figure 27: Select a new quiz.

Select a question type and fill in the related form.

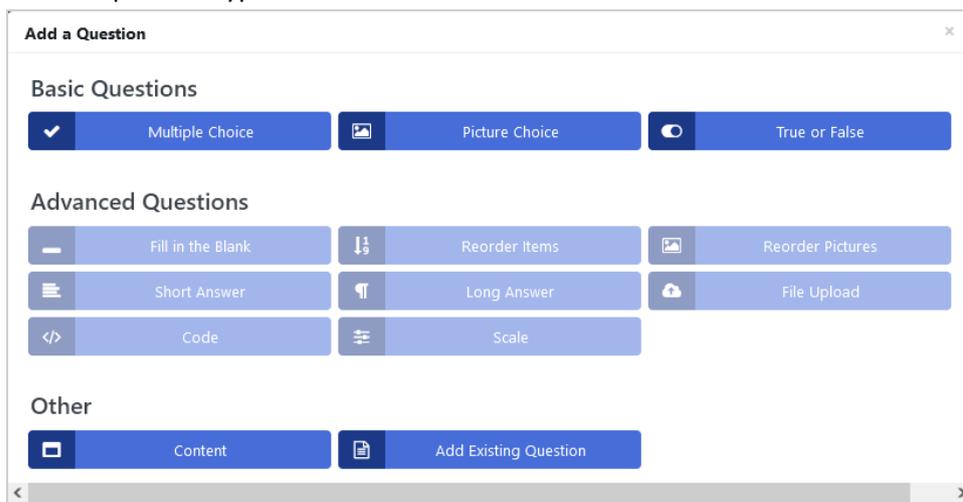


Figure 28: Only three question types are available in the free version, other options are paid extensions.

Questionnaire for this plug-in

Content creation

	Yes	Restricted	No
The course pages support short keys [wp-key]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Videos can be inserted	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canva's content can be inserted (iFrame)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H5P can be inserted (iFrame)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

H5P can be inserted directly from WP	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
Animaker can be inserted (iFrame)	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>
Additional structuring of text is possible with the Shortcodes Ultimate Plugin	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>

Course fees are possible) (Explain why we ask)	<input type="radio"/>	<input checked="" type="checkbox"/>	<input type="radio"/>
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Course creation is supported by an “assistant”

Strongly agree Partly Agree Disagree Strongly Disagree

Courses can be adapted, for example different target groups, easily

Strongly agree Partly Agree Disagree Strongly Disagree

Courses can be amended easily

Strongly agree Partly Agree Disagree Strongly Disagree

More than one course creator can work in the course development

Strongly agree Partly Agree Disagree Strongly Disagree

Courses and administration

Courses offered with the platform are displayed in an attractive way

Strongly agree Partly Agree Disagree Strongly Disagree

There exists the possibility to give a clear description for each course (in the course overview of the platform)

Strongly agree Partly Agree Disagree Strongly Disagree

Courses of different course creators are visible to all enrolled participants

Strongly agree Partly Agree Disagree Strongly Disagree

Participants must enroll to attend a course

Strongly agree Partly Agree Disagree Strongly Disagree

Enrollment of participants is easy

Strongly agree Partly Agree Disagree Strongly Disagree

The user interface is clear for basic users (or newbies in working with learning platforms)

Strongly agree Partly Agree Disagree Strongly Disagree

3.5. Summary

A quick review of 4 different **LMS plugins** of WordPress:

- LearnPress
- Masteryio
- Tutor
- Lifter

All plugins are mostly alike, and easy to navigate. Some plugins are more limited than others. For instance, all plugins had an option of embedding a video, but the video was only visible on LearnPress and Masteryio. Therefore, Lifter and Tutor did not accept Canva's video. Apart from that, some plugins could not implement all H5P features used to create the course. "Fill in the blanks" and "find a missing word" were two features used. Learnpress and Tutor were the only two plugins able to implement both features, while Masteryio lacked "find the missing word", and Lifter lacked both features. One advantage of Tutor was that this plugin had an option of providing different quiz feedback. For example, showing results right after the user answers a question, showing results at the end of the quiz, etc.

3.6. Recommendation

To sum up, if we had to put them in a particular order of easiest to use, most features, and most user-friendly interface, it would be the following:

1. LearnPress
2. Masteryio and Tutor (tied)
3. Lifter

3.7. Comparison Table

Here is a simple comparison table. Please consider the disclaimer at the end of this chapter.

Feature	LearnPress	Masteryio	Tutor	LifterLMS
Price	Free (premium addons available)			
Course Creation	Yes	Yes	Yes	Yes
Quiz Functionality	Yes	Yes	Yes	Yes
Drag and Drop Course Builder	No	Yes	Yes	Yes
Course Prerequisites	Yes	Yes	Yes	Yes
Certificates	With paid addon	Yes	With paid addon	With paid addon
Course Bundles	With paid addon	Yes	With paid addon	Yes
User Profiles	Yes	Yes	Yes	Yes
Reporting & Analytics	Limited (more with addons)	Yes	Yes	Yes
Multi-Instructor Support	With paid addon	Yes	With paid addon	With paid addon
Built-in Payment Gateways	No (integrates with WooCommerce)			
Membership Features	With paid addon	With paid addon	With paid addon	Yes
Localization	Yes	Yes	Yes	Yes
Support & Documentation	Limited (better with premium)	Good	Good	Good

Table 3: Comparison table of the plugins

Please note that each plugin has its own set of free and premium features. Prices and features may change over time, so it's always a good idea to visit the plugin websites to get the most up-to-date information.

3.8. Disclaimer

The proposals and recommendations provided herein are based on the circumstances and knowledge available during Spring 2023. Our project team has taken reasonable care to ensure the accuracy and reliability of the information presented; however, we cannot guarantee its correctness, completeness, or suitability for your specific needs. The team takes no responsibility for any errors, omissions, or inaccuracies that may arise.

Please note that these recommendations are personally influenced by the experiences of our team members during the development and implementation of pilot training courses. As such, they may not necessarily reflect universally applicable best practices or be suitable for all situations. It is the responsibility of the recipient to evaluate the relevance and appropriateness of our recommendations based on their specific requirements and context.

By using the information provided in these proposals, you acknowledge and agree to accept any risks associated with the implementation of the suggested strategies and techniques. The project team will not be held liable for any negative outcomes or consequences that may arise from the application of these recommendations.

4. EXAMPLES & PILOTS

During the project's lifetime, various material has been developed and shared in the sense of "Exchange of Good Praxis".

In this chapter, essential findings, examples, and working outlines are summarised.

4.1. Basic considerations for using multimedia-based and interactive content.

When using multimedia content in learning, it is important to consider the following items:

- 1. Relevance**
The content should be relevant to the learning objectives and align with the curriculum.
Recommendation: Use Backward Design in the planning of the course. After the Backward Design-based results are available, you can decide how the content can be created.
- 2. Accessibility**
This item addresses the problem of Multiple Devices. The content should be accessible to all learners, including those with disabilities.
- 3. Engagement**
The content should be engaging and interactive to keep the learners' attention.
Recommendation: Use a variety of different multimedia content. This follows the principle of "method change".
- 4. Feedback and Assessment**
The content should provide feedback to the learners to allow them to assess their understanding and progress.
Recommendation: Use formative assessments regularly, implemented as "Self-Evaluation". You may create these using H5P or eXe-Learning.
- 5. Compatibility**
The content should be compatible with the technology and devices used by the learners. This addresses the problem of "Multiple Devices".
- 6. Cultural sensitivity and Inclusion**
The content should be culturally sensitive and inclusive. This item has two different levels: One is the cultural aspect, which focuses mainly on the used content. The other addresses technical issues and deals directly with the "Multiple Devices" Problem.
- 7. Quality**
The multimedia should be of high quality and appropriate for the intended audience.
Recommendation: Implement a quality circle with a development phase, a testing or evaluation phase, an amendment, and the implementation phase.
- 8. Evaluation**
The effectiveness of the multimedia content should be evaluated to improve the learning experience. This can be done by implementing learners' feedback as well as trainers' feedback.
Recommendation: Implement both types of feedback for training!

9. Variety

Multimedia content should be varied to appeal to different learning styles and preferences.

Comment: This is difficult in some way and often not applicable to small organisations. In any case, you should provide a transcript for videos - this is an inclusion means as well.

10. Flexibility

Multimedia should be flexible in terms of pacing and use, allowing learners to access and use it as needed.

The team observed some added value of using multimedia-based and interactive content in learning and training:

- **Increased engagement**
Multimedia-based and interactive content can help capture learners' attention and increase their engagement with the material. This can help learners stay focused and retain more information.
- **Improved retention**
The use of multimedia elements, such as images and videos, can help learners process and remember information more effectively. Interactive elements, such as quizzes and simulations, can also reinforce learning by allowing learners to apply their knowledge.
- **Personalized learning**
Interactive elements can also help personalize learning by allowing learners to navigate the content at their own pace and focus on areas where they need more help.
- **Real-world relevance**
Multimedia-based and interactive content can help bridge the gap between theory and practice by providing learners with real-world examples and scenarios. This can help learners apply their knowledge to real-life situations.
- **Cost-effectiveness**
While the initial creation of multimedia-based and interactive content may require a significant investment, it can ultimately be more cost-effective than traditional classroom training, as it can be used repeatedly and scaled to a larger audience.

Overall, the added value of using multimedia-based and interactive content in learning and training is that it can help create a more engaging, effective, and personalized learning experience for learners.

Creating multimedia content means some effort to the trainers: learning the tools, creating the applications, and finally testing and integrating them into the course. Can we estimate the degree to which learners value this content? We have thought of a few ways to do this.

One way is to conduct a post-training evaluation. After completing the training, ask learners to provide feedback on the effectiveness of the multimedia and interactive elements. This feedback can be collected through surveys or focus groups.

Another option is tracking engagement metrics. Using a learning management system, you can track engagement metrics, such as the amount of time learners spend on multimedia elements and their performance in interactive activities. Unfortunately, the WordPress-based LMS plugins do not support this.

Measure knowledge retention can be a tool as well. Test learners' knowledge retention before and after the training to see if the multimedia and interactive elements had an impact on their learning.

Additionally, it makes sense to monitor completion rates. By tracking completion rates, you can see if learners are engaging with the multimedia and interactive elements or if they are skipping them. You may ask learners without completing the training why they have stopped.

Overall, estimating the appreciation of adult learners using multimedia and interactive content requires a combination of quantitative and qualitative measures to assess the impact on engagement, knowledge retention, completion rates, and learner satisfaction.

4.2. Preconditions for the use of multimedia-based and interactive content

To use multimedia-based and interactive content, you need the following:

1. Web hosting

A web server with a webspace to host the multimedia content, make it available online and serve it to visitors.

Remark: Most presented material can be integrated and displayed with WordPress (or using WordPress with an LMS Plugin) or MOODLE.

Remark: eXe-Learning can be used either directly hosted from some webspace or also as a stand-alone application. This enables to distribution the content locally, without any internet connection, for example from a USB Pen Drive.

2. Some multimedia-based content needs a host to be displayed. This applies to the following products:

- H5P content
Possible hosts are WordPress and MOODLE
- Interactive CANVA content is hosted by CANVA and taken directly from their webpage and inserted using an iFrame.
- Videos can be taken from YouTube (as a hoist) and are inserted either with an iFrame or in some other methods.

3. Compatible browsers and devices

The ability to view multimedia content depends on the device (this addresses the Multiple Device problems) and the browser used. Ensure that the content will be compatible with most devices and browsers.

Remark: Currently, popular browsers are Google Chrome, Firefox, and Microsoft Edge. They all can display the currently produced multimedia content.

4. Good or high-speed internet connection

Multimedia content requires a lot of bandwidth and may take longer to load on slow internet connections.

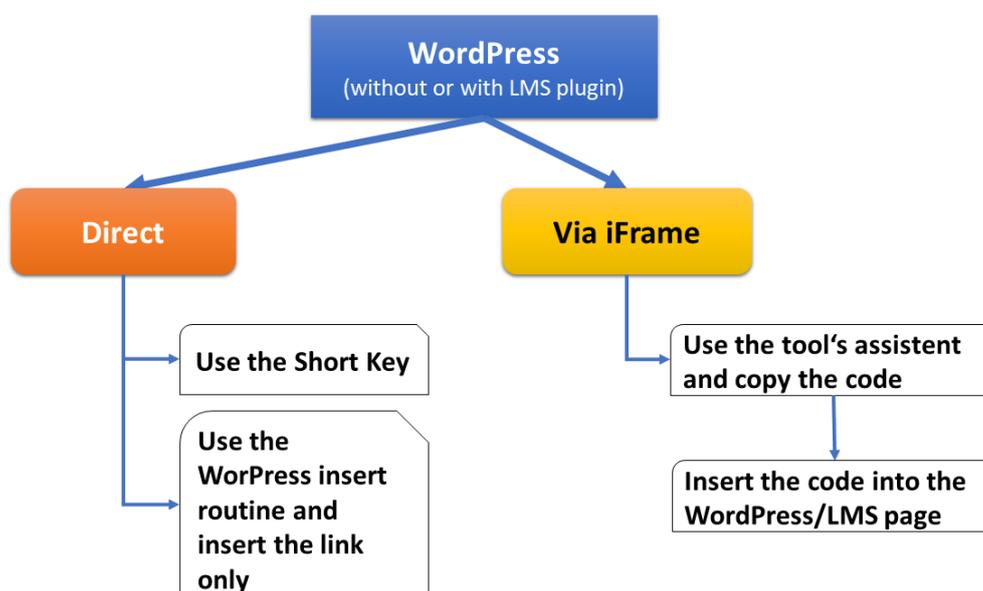
4.3. Implementation

In this chapter, we explain how you can implement the developed multimedia-based and interactive content. As mentioned in the aims of the project, we focus on the implementation of WordPress (possible with or even without an LMS plugin).

We must distinguish between two different methods: direct insertion of content or inserting multimedia applications using an iFrame.

Note: both methods are possible without HTML or programming knowledge. The prerequisite in any case is an essential user experience on WordPress, minimally as an editor.

The possibilities are shown here as a graphic:



The following table gives an overview of popular multimedia content and the integration methods:

Direct insertion	iFrame insertion
<ul style="list-style-type: none"> • YouTube (using the Media Database) • AniMaker Videos • H5P content • Special cases for CANVA 	<ul style="list-style-type: none"> • H5P (if short codes are not possible) • CANVA content • YouTube Videos (if not inserted via the Media Database)

Table 4: Comparison between the two common implementation options

4.4. Implementation examples

In this chapter, we present several examples to demonstrate the practical implementation of the multimedia-based and interactive content.

4.4.1. Implementation of (any) H5p content

The following example is taken from the WordPress LMS platform LifterLMS (Link: <https://www.advanced-training.at/wplms/lesson/take-the-test/>. To see the test, you must be enrolled into the course).

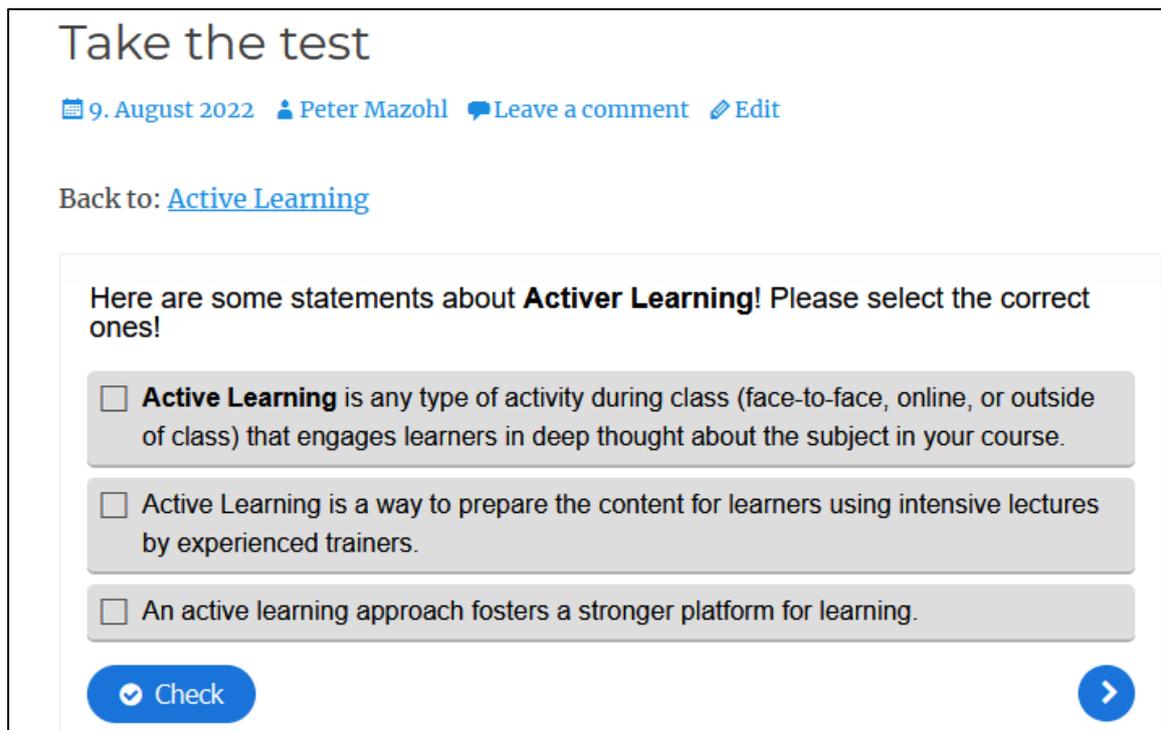


Image 14: Screenshot of the H5P test

Step 1: Select the H5P module.

The process starts with the looking for the content.

Precondition: The administrator of the WordPress learning platform must have installed the H5P plugin. Further information to install the plugin is available from the H5P webpage. Link: <https://h5p.org/wordpress>

Content must be ready for use and is available in a kind of internal repository (listed under the H5P plugin menu).

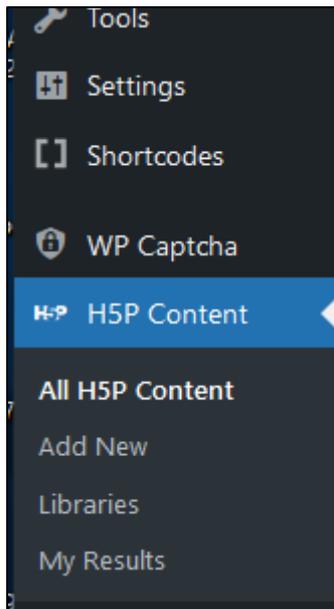


Image 15: Select the plugin's interface.

As an Editor, switch to the dashboard and select the H5P content from the menu.

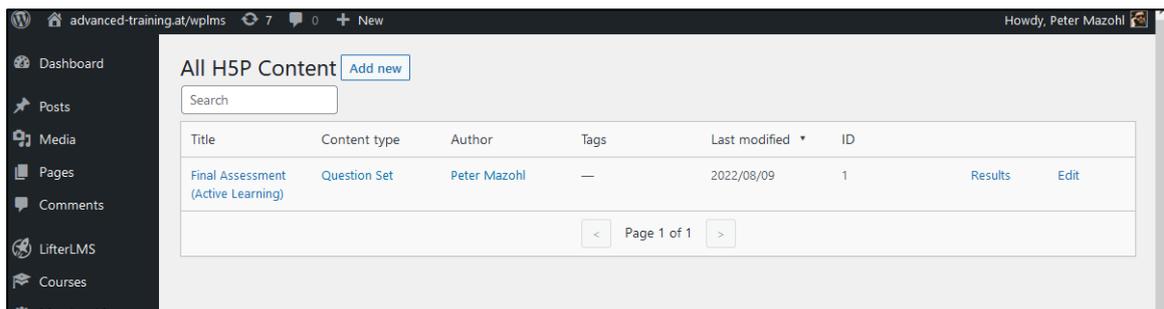


Image 16: Select the interface to create a new plugin module.

When selecting H5P (All H5P Content), you see the available content.

You open the file for editing.

Example 1: Inserting with short codes

You see the content as it will be displayed in the lesson. In the box to the right, you see the short code [hp5 id="1!]. Select it and copy it.

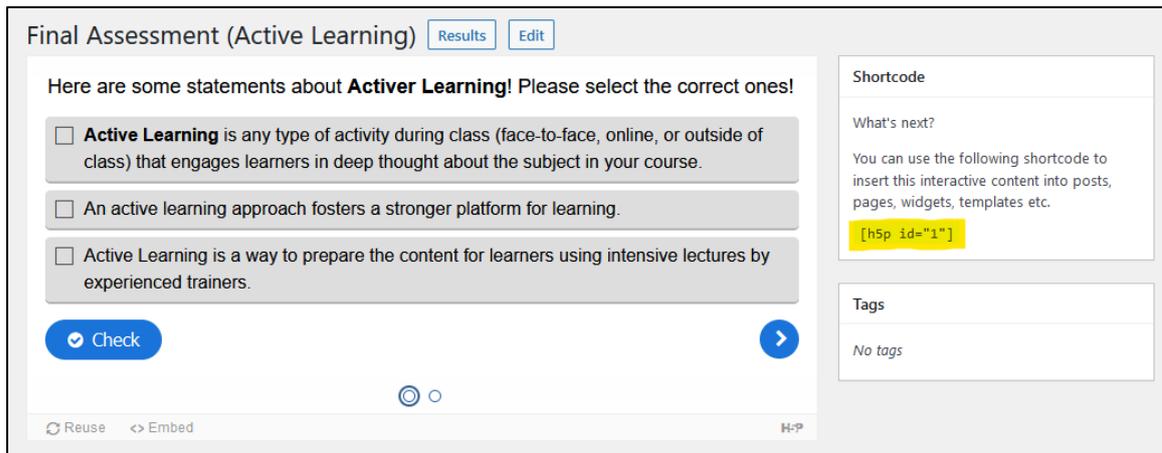


Image 17: H5P content as displayed in the repository, opened, and ready for editing.

Now you switch to the lesson and open it in the editor. You can insert the copied text at any place in the text.

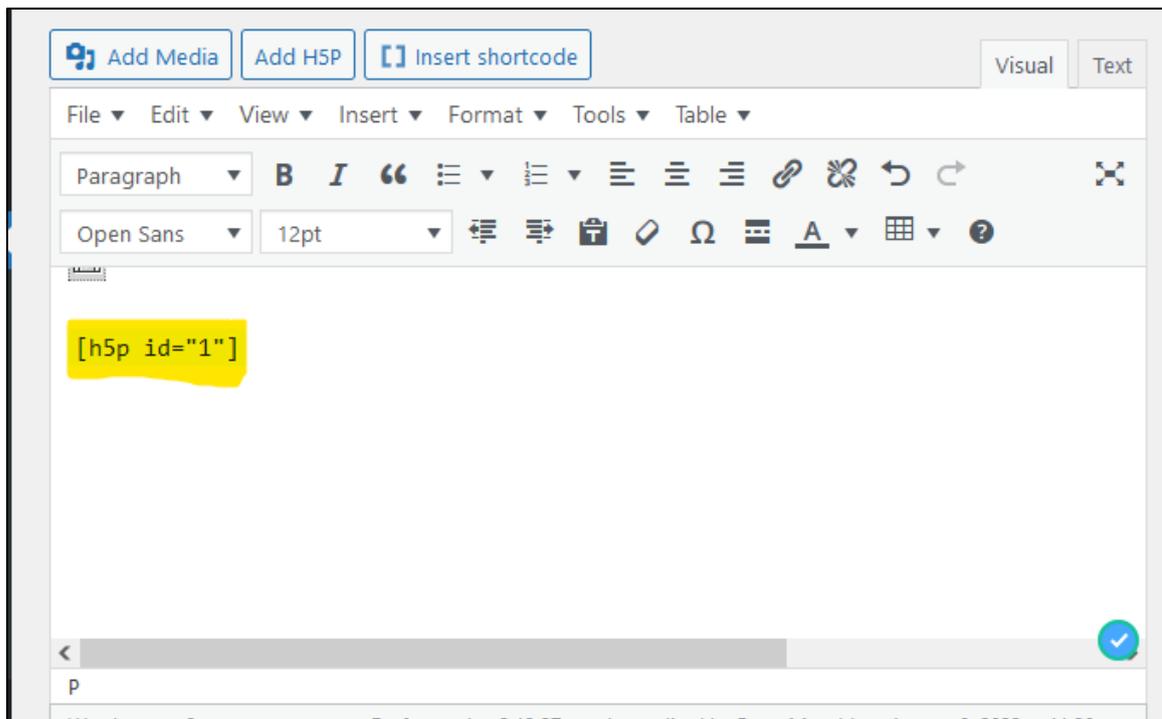


Image 18: Inserting the copied ID into the WordPress page text (is done in the preview mode).

Save your edited lesson and select the preview: The H5P content will be displayed.

Example: Embedded (iFrame)

When you have opened the link, you see the content displayed.

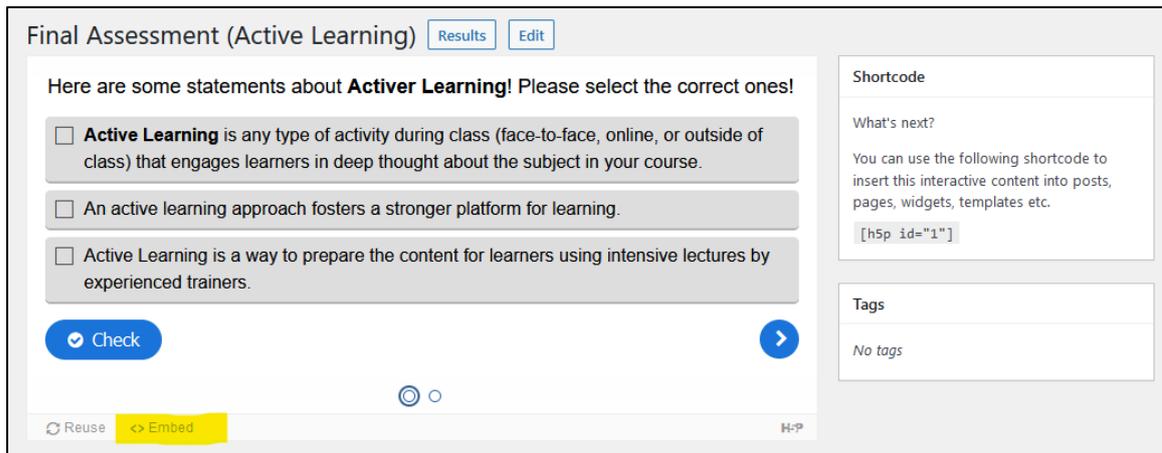


Image 19: Same view as before, but you do not select the ID but click on the "EMBED Symbol <>".

Click on the <> Embed link at the bottom.

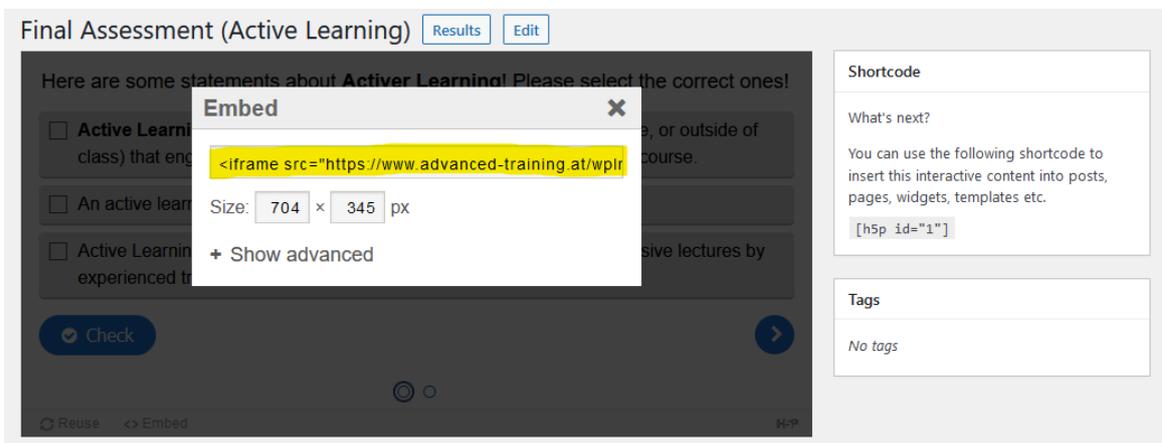


Image 20: Now you copy the embed-code for the iFrame.

An overlay is displayed showing the iFrame code. You select the complete line and copy it to the clipboard.

The copied text is one, long line. You neither must see it nor check it nor change it.

```
<iframe title="Final Assessment (Active Learning)" src="https://www.advanced-training.at/wplms/wp-admin/admin-ajax.php?action=h5p_embed&id=1" width="863" height="324" frameborder="0" allowfullscreen="allowfullscreen"></iframe><script src="https://www.advanced-training.at/wplms/wp-content/plugins/h5p/h5p-php-library/js/h5p-resizer.js" charset="UTF-8"></script>
```

Image 21: Screenshot of the embedded text. It is not necessary to understand the text, but you should not change any character (without deeper going knowledge).

You go to the lesson and open it in the editor.

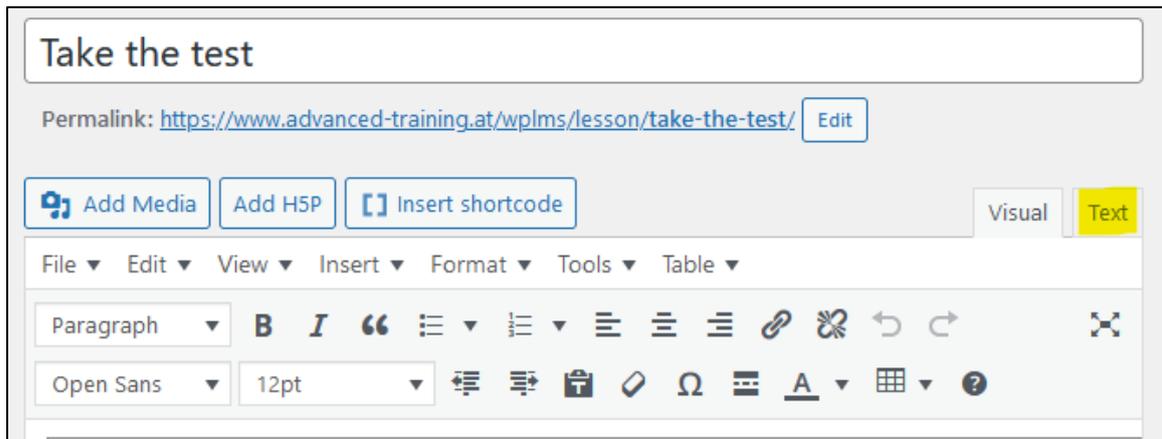


Image 22: You must switch into the text mode (page related code cannot be inserted in the Visual mode).

Now you switch to the text mode. In this mode, you insert the content from the clipboard.

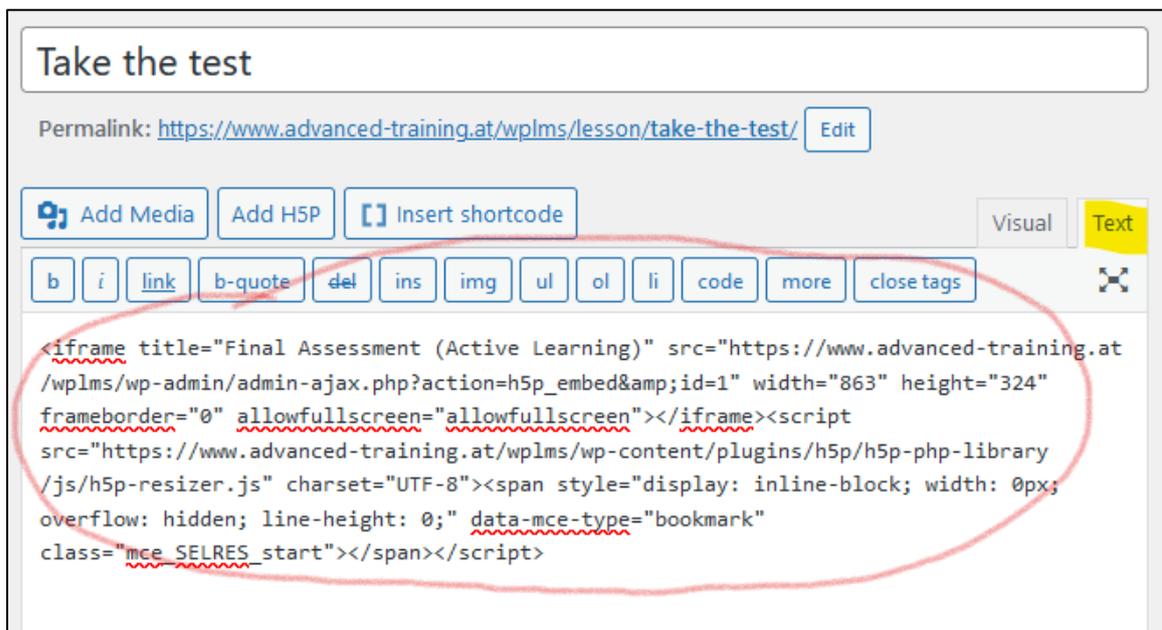
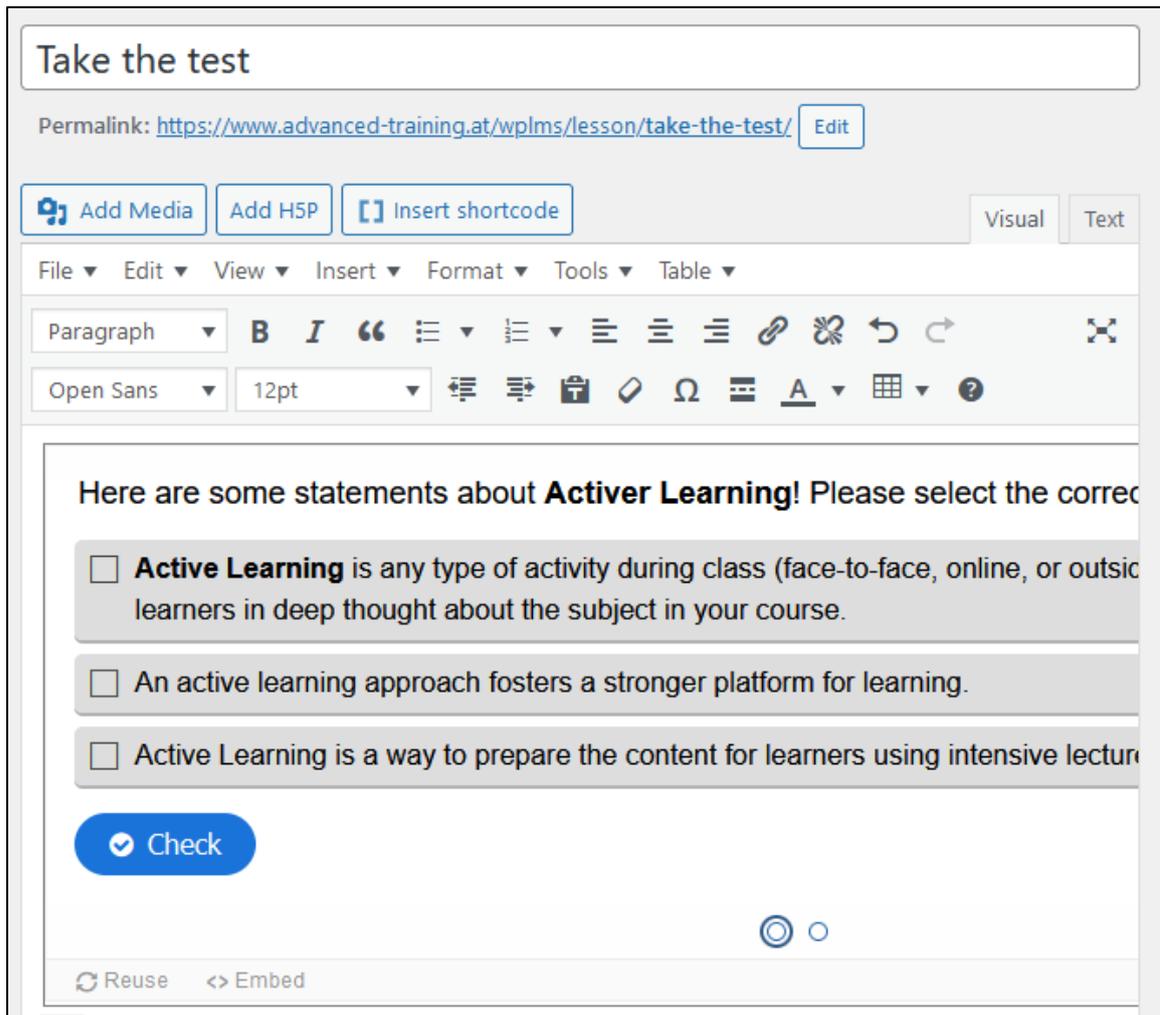


Image 23: Insert the text into the WordPress page.

If you switch back to the Visual Mode, you will get displayed the multimedia content (be patient, that will take several minutes).

A screenshot of a Moodle quiz interface. At the top, there is a title 'Take the test' in a rounded rectangle. Below it, a permalink is shown: 'Permalink: <https://www.advanced-training.at/wplms/lesson/take-the-test/>' with an 'Edit' button to its right. Below the permalink are three buttons: 'Add Media', 'Add H5P', and 'Insert shortcode'. To the right of these buttons are two tabs: 'Visual' and 'Text'. Below the buttons is a menu bar with 'File', 'Edit', 'View', 'Insert', 'Format', 'Tools', and 'Table'. Below the menu bar is a rich text editor toolbar with various icons for text formatting (bold, italic, quote, list, link, unlink, undo, redo) and other functions (font face, font size, bulleted list, numbered list, link, unlink, undo, redo). Below the toolbar is the main content area, which contains the text: 'Here are some statements about **Activer Learning!** Please select the correct'. Below this text are three multiple-choice options, each with an unchecked checkbox:

- Active Learning** is any type of activity during class (face-to-face, online, or outside) and requires learners in deep thought about the subject in your course.
- An active learning approach fosters a stronger platform for learning.
- Active Learning is a way to prepare the content for learners using intensive lecturing.

Below the options is a blue 'Check' button with a white checkmark icon. At the bottom of the content area, there are two radio buttons, the first of which is selected. At the very bottom of the interface, there are two buttons: 'Reuse' and 'Embed'.

4.4.2. Implementation of CANVA content

First, you open your CANVA dashboard with your account and select the item you want to insert. Switch to the Edit Mode.

Now you select “Share”. This brings you to the overview of possible share methods.

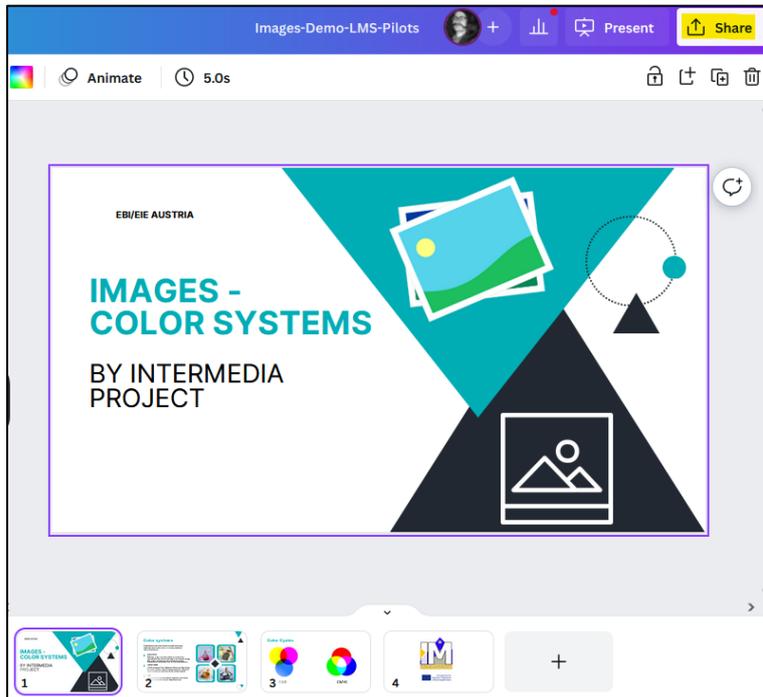


Image 24: Canva Graphic, ready to share

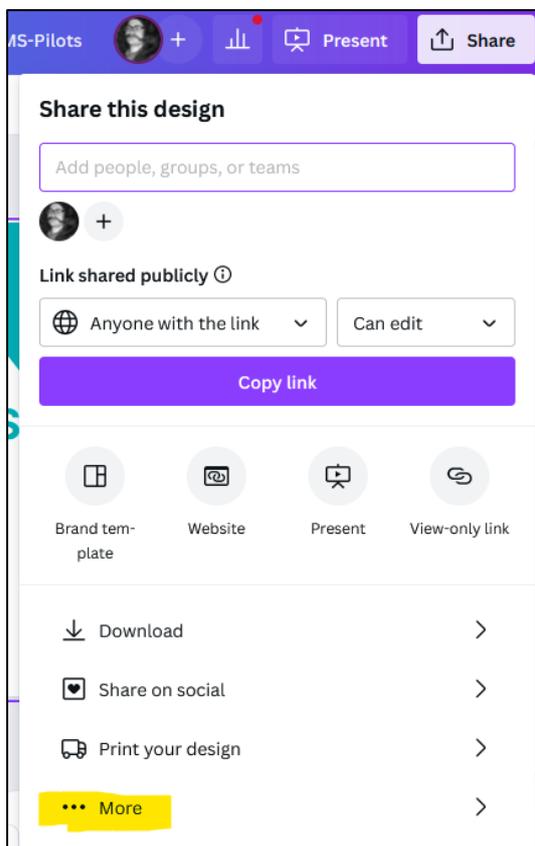


Image 25: The “Share Dialog” opens, and you see the major share methods. Select “...More”

Select the ... More link to see all options.

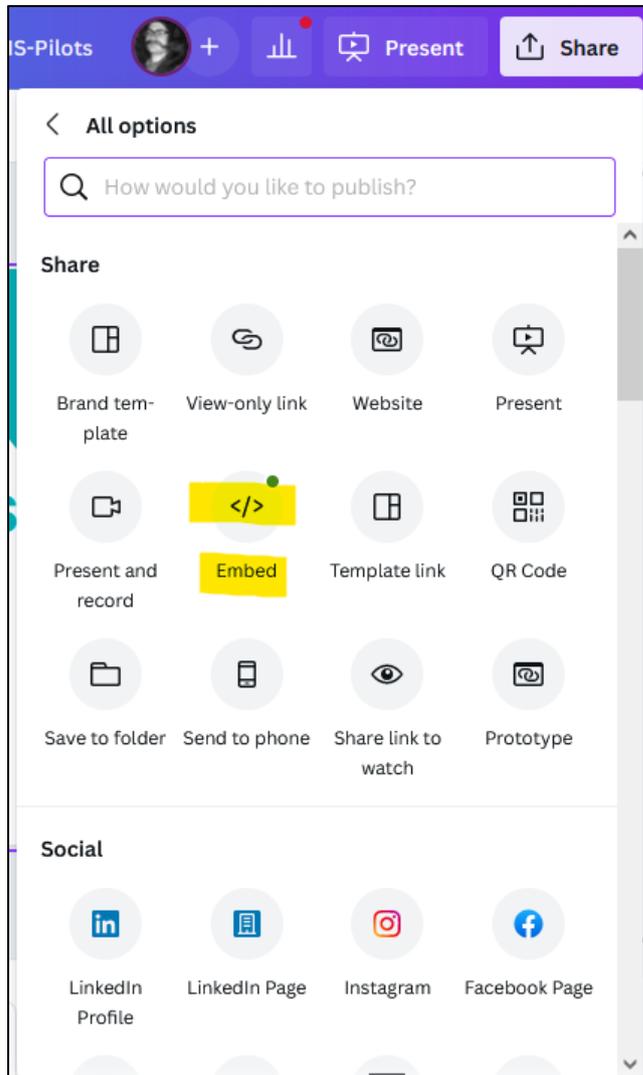


Image 26: You get listed all methods - share the "Embed Symbol </>"

Comment: CANVA offers numerous options for inserting content: For HTML pages (like those provided by WordPress), but for social media as well. You also may save the content or export it.

If you want to use the advanced features of CANVA, you must share the content by embedding the item on your page. This has an added value since you only have one file (available from CANVA) and each of the changes will be available after saving in all embedded versions.

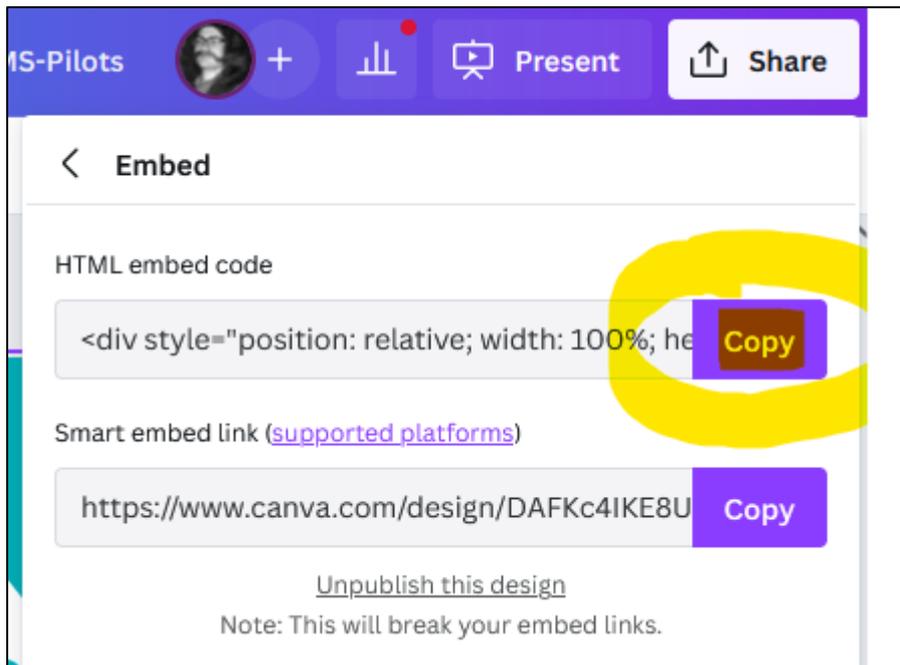


Image 27: CANVA offers an own "Copy" button to copy the embed content into the clipboard.

After having selected the Embed feature you see a new overlay with the code. CANVA offers you to click on the Copy Button to take the code into your clipboard.

Now you switch to the lesson, opened in the WordPress Editor, and here you also switch into the Text mode. Now you can insert the code.

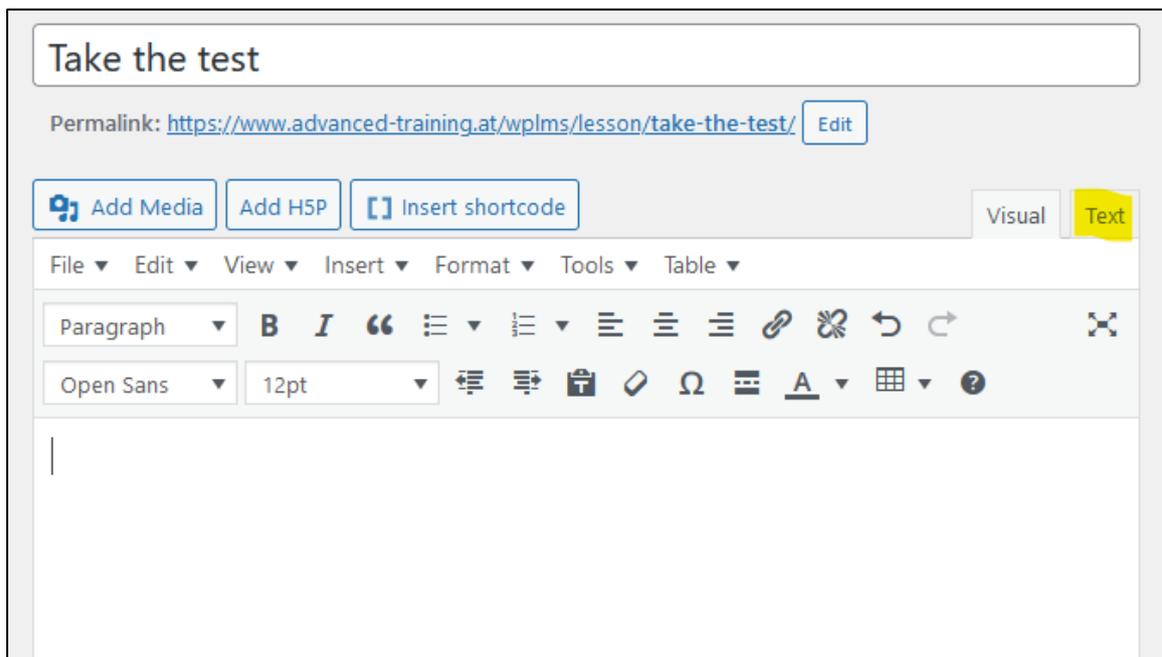


Image 28: Here you enter the embed code - do not forget to switch into text mode!

The CANVA-code is more complex than the iFrame code from H5P. Nevertheless, it works the same way (with some additional formatting included).



Image 29: The embed text looks strange - here you should not change anything!

You select the Visual Mode again and now you get displayed the CANVA content.

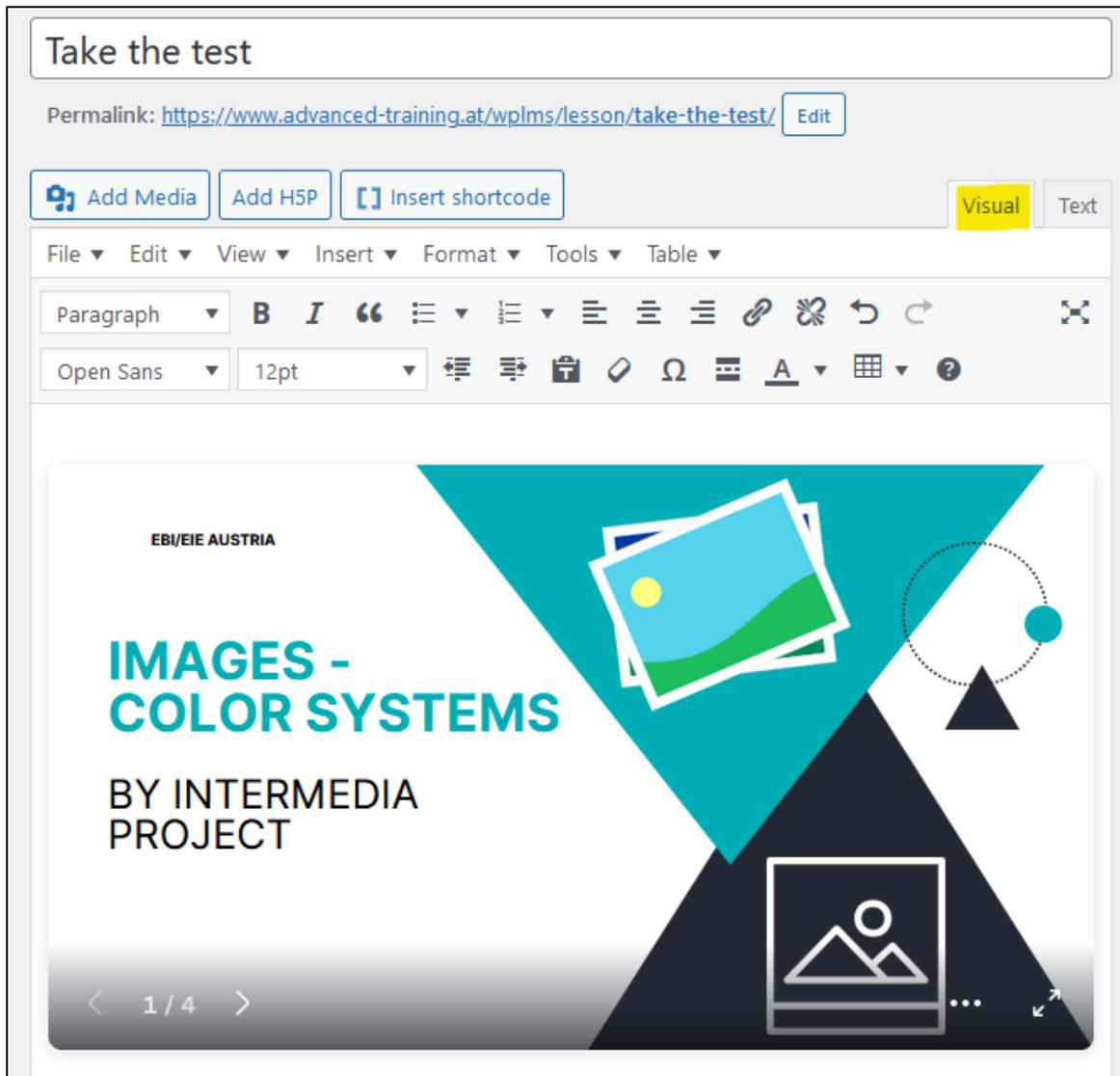


Image 30: Ready page in the WordPress preview.

4.4.3. Insert YouTube Content (as a link using the Media Database).

WordPress offers inbuilt filters to insert videos easily with the link to the video. This works perfectly with YouTube.

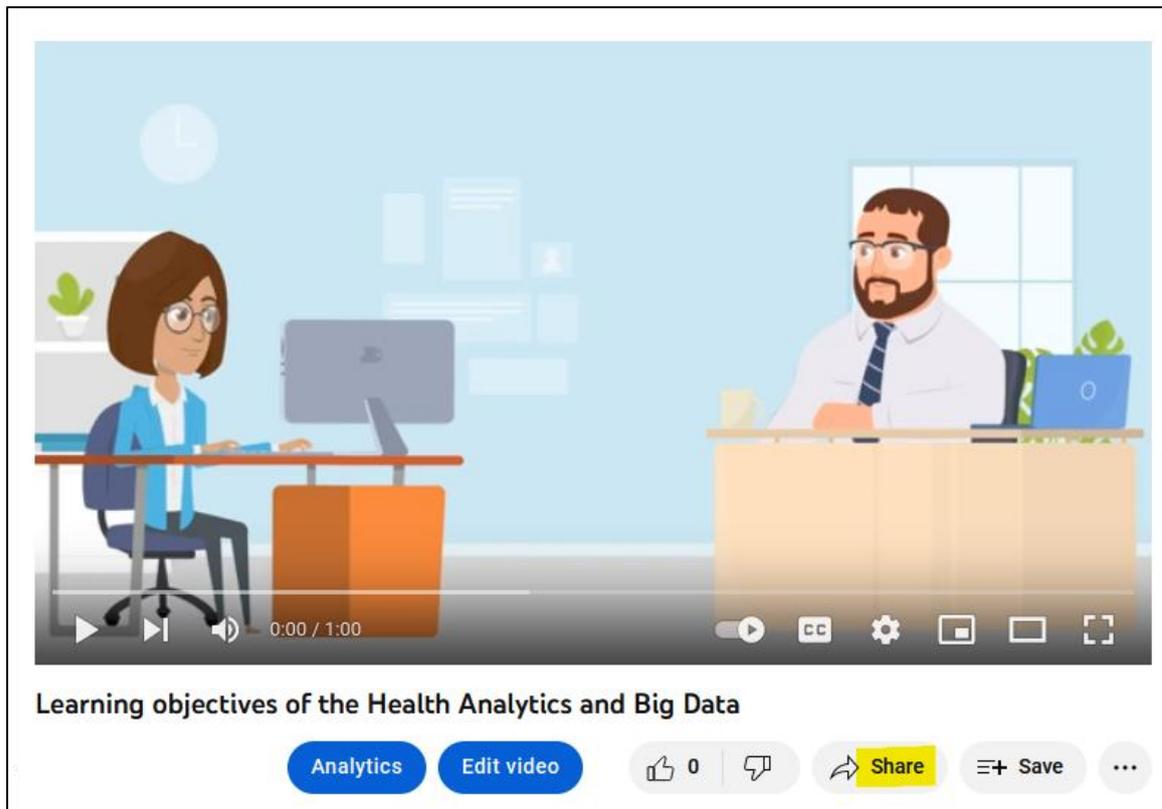


Image 31: Ready video, uploaded into the YouTube Channel.

You login into your YouTube account and select the video. Use the Share link.

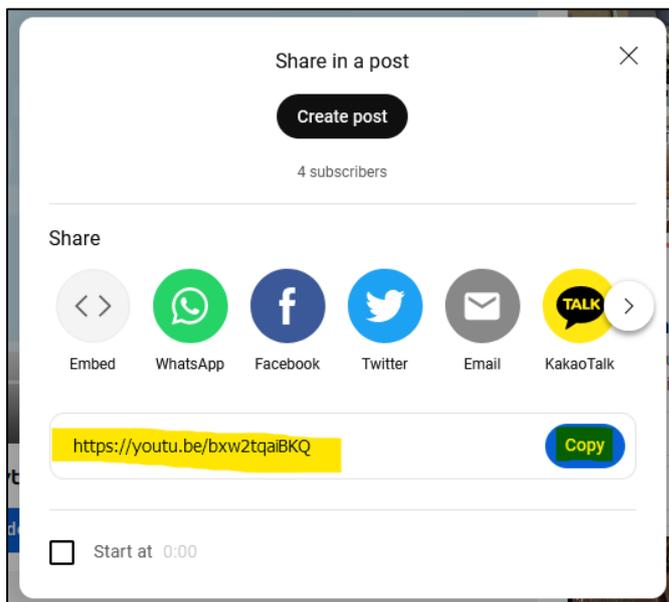


Image 32: Select the share code.

In an overlay, you can select the link easily by clicking the Copy button. This copies the link into the clipboard.

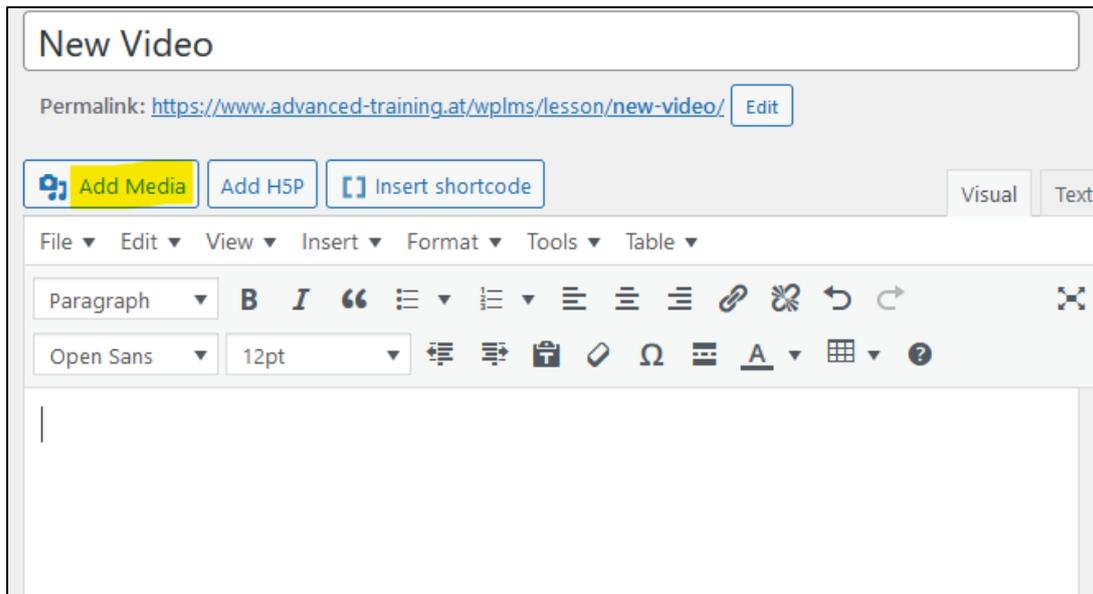


Image 33: Insert the embed text into the WordPress page.

With the link in the clipboard, you switch to WordPress and open the page, where you want to display the video, in the editor. You put the cursor in the position where the video will appear. You select Add Media from the editor’s menu.

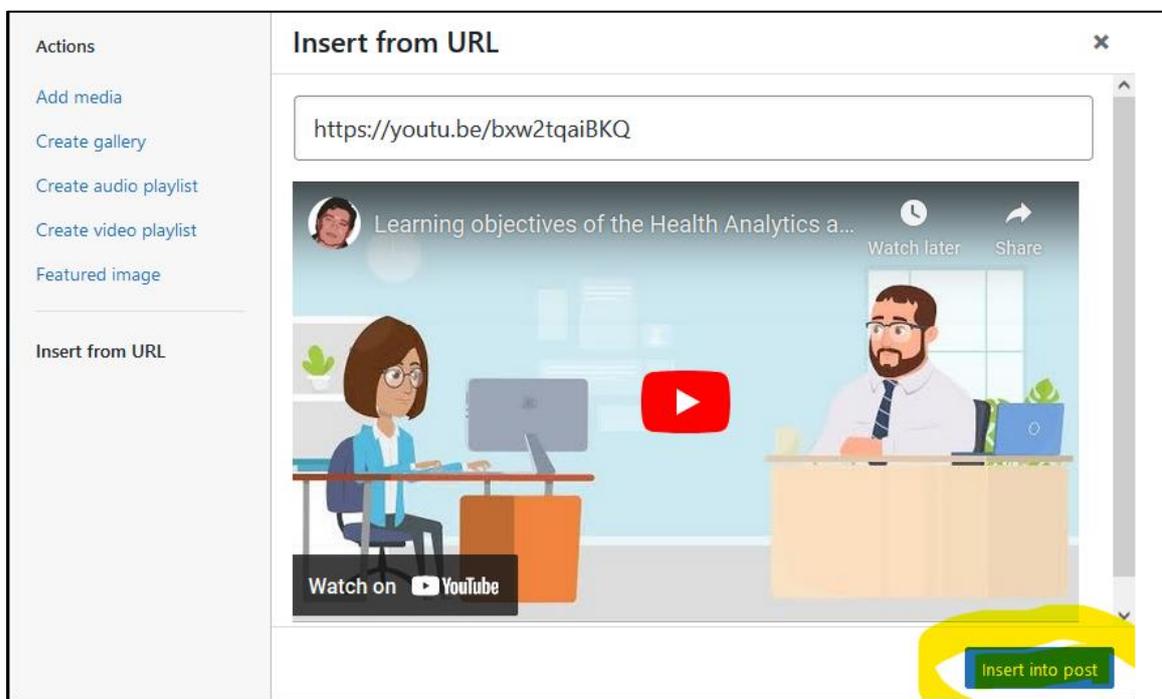


Image 34: In WordPress select "Insert from URL (because you use the link from YouTube).

Select Insert from URL in the next overlay and insert the content of the clipboard into the field for the URS. Several seconds later, you will see the video (If the video does not appear,

check the correctness of the link or the internet connection). Click the Insert into post button and close the Media Database Interface.

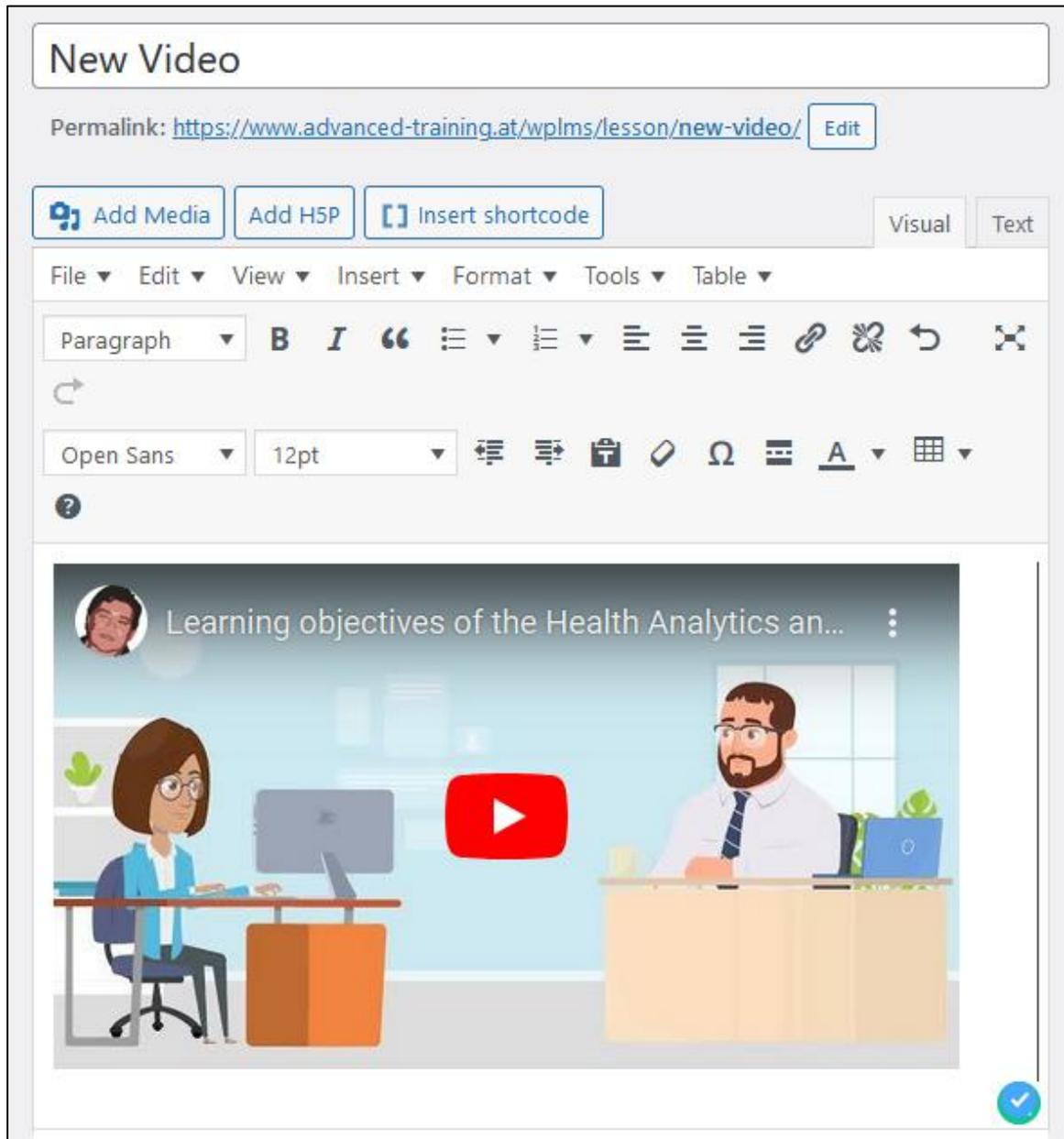


Image 35: After a short time (depending on the Internet connection) the video is displayed.

The page will display the video, after the obligatory update of the post you can see the video in the preview, and you can play it.

4.4.4. Insert YouTube Content (embedded).

The embed process is similar to all other embed examples. You select your video from YouTube as mentioned above.

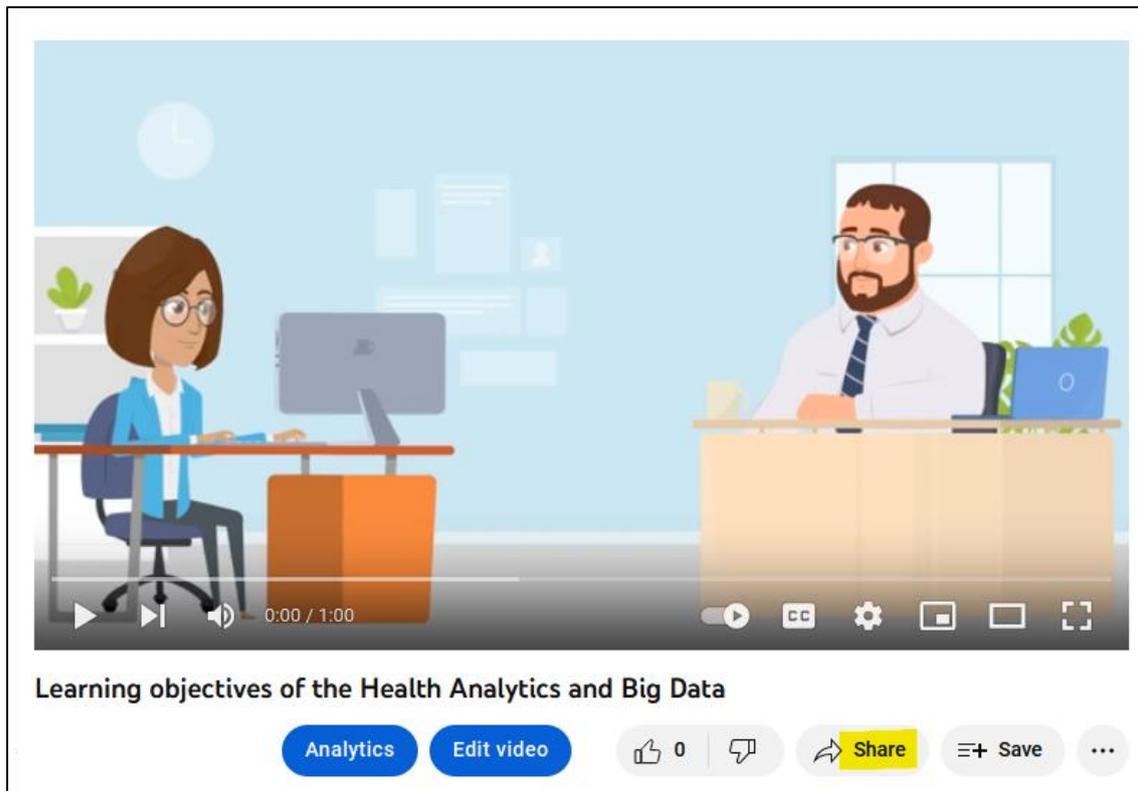


Image 36: Video, as displayed in YouTube.

Again, you select the Share link. In the overlay, you select the <> Embed option (and not the link). This opens another overlay.

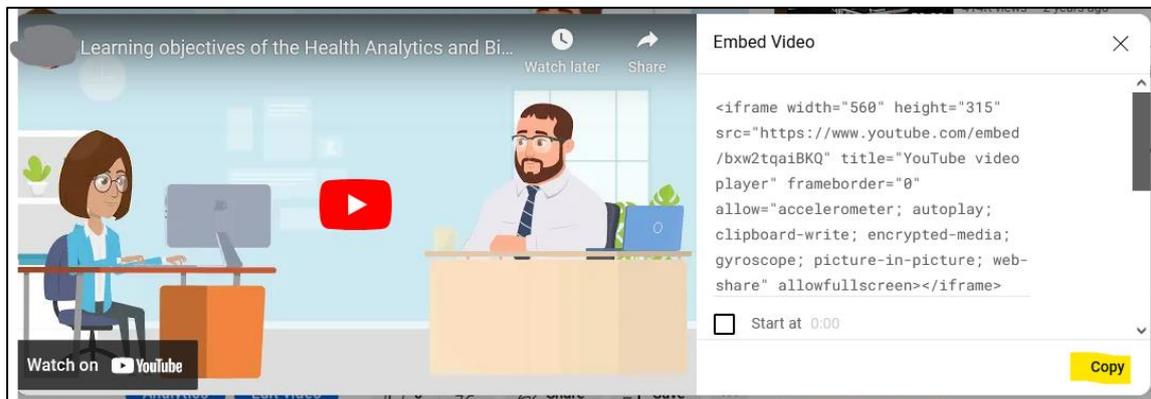


Image 37: Clicking Share, opens an overlay providing the code, you have to copy and to insert later into the WordPress page.

You see the embed code. Do not care about the text - even if it is confusing! Simply, press the copy button to get the code into the clipboard.

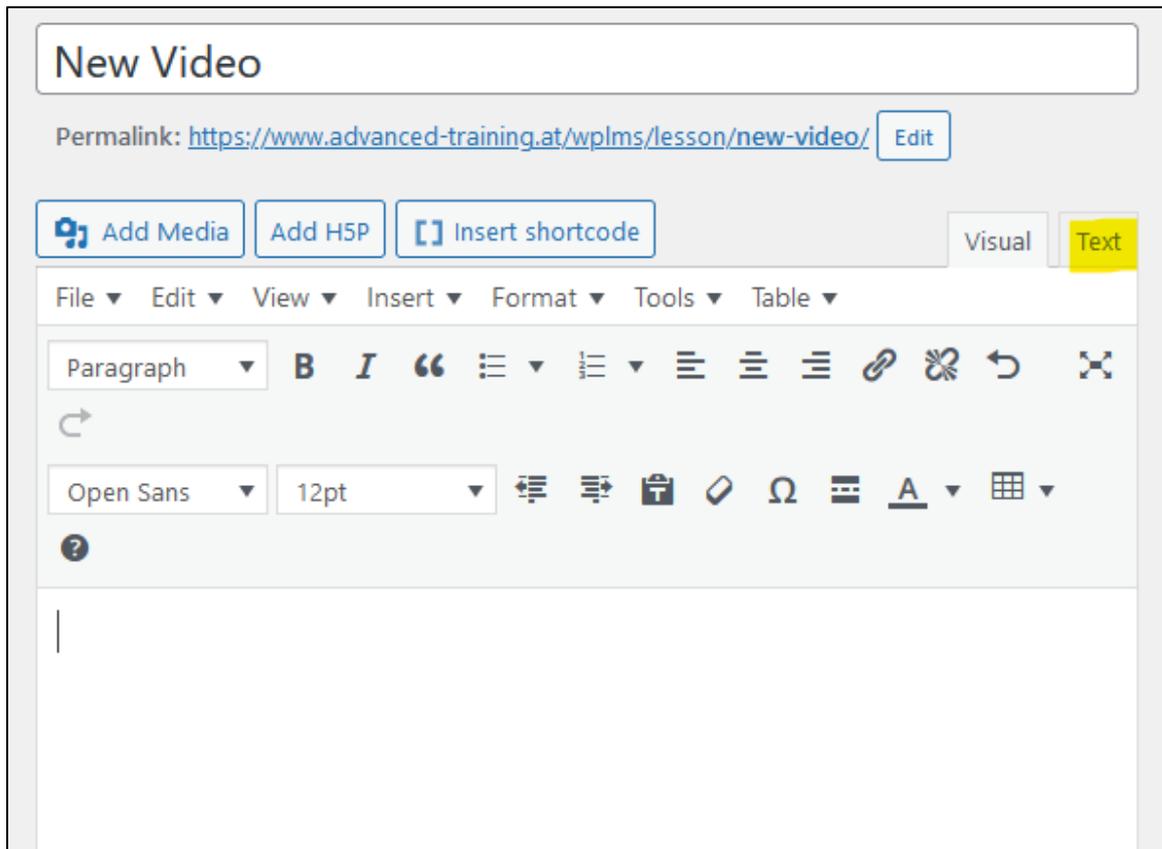


Image 38: Open the WordPress page to insert the copied code.

As a next step, you switch to WordPress and open the page where you want to insert the video in the editor. Search the switch in the text mode (in the upper-right corner of the editor).

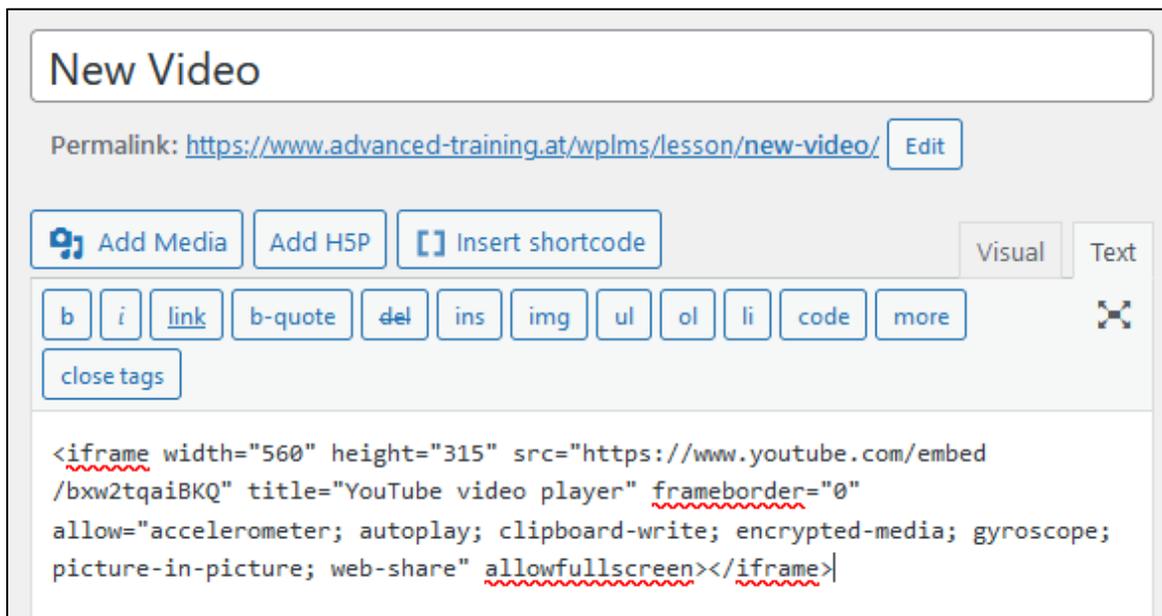
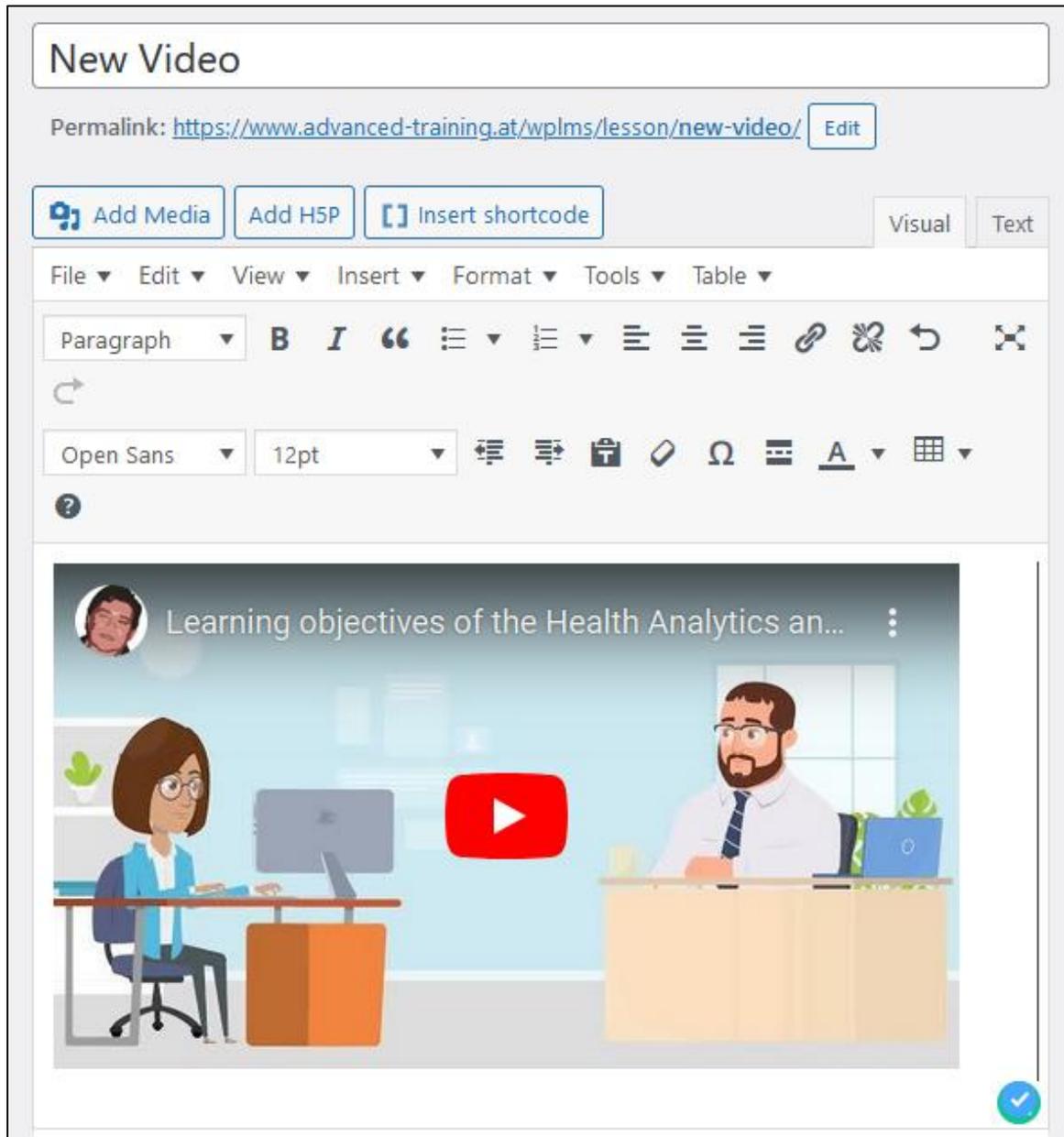


Image 39: The code must be inserted in the Text Mode (not the Visual).

After you have switched to the text mode, you can insert the content from the clipboard. Select the Visual mode again, and - voilà - there is the video displayed!

Do not forget to update the page!



4.5. Pilots

In the frame of the project, several pilots as best practice examples have been developed. The identical four courses have been developed and implemented for each LMS plugin. This enables us to compare the power, look-and-feel of the analysed LMS plugins as well as the usability.

There are five courses available in all WordPress Learning Management systems:

1. Active Learning

This course is on “Active learning is a process that has student learning at its center. Active learning focuses on **how** students learn, not just on **what** they learn. Students are encouraged to ‘think hard’, rather than passively receive information from the teacher.”

2. Figma

This is an introductory course about an industry standard, design tool called Figma.

3. Flipped Learning 3.0

This course gives a brief introduction to Flipped Learning 3.0.

4. How to use Canva in your courses

This is a basic course to explain how to use the graphic design tool Canva, starting from the creation of an account, the design and sharing of content and how to start practicing.

The idea behind this is the possibility of comparing the individual LMS: What is the process of signing up for a course? What do the individual courses look like in the different LMSs?

Where are the differences in the learning process?

The various LMS can be used with these links:

Platform	Link
Masteriyo	https://www.advanced-training.at/learn/
LearnPress	https://www.advanced-training.at/learnpress/
Tutor LMS	https://www.advanced-training.at/tutor/
LifterLMS	https://www.advanced-training.at/wplms/

Image 40: Pilots and the links to the platform

5. ABOUT THE PROJECT & THE PARTNERS

The world today is digital. In training, various types of digital devices are used. This includes desktop PCs, laptops, notebooks, Chromebooks, tablets, convertibles, and smartphones. We call them “[Multiple Devices](#)”. They enable the use of technology-enhanced training with the implementation of multimedia-based and interactive (M&I) training materials. This sounds simple – the problem is the delivery of content so that it is displayed (and can be used by the trainees) on all types of devices. Another issue (in this context) is the creation of high-quality Multimedia-based and Interactive (M&I) content – especially in smaller Adult Education organisations.

The InterMedia project serves to exchange experiences and to develop digital skills, especially in the multimedia area, within the staff of the participating organisations. Furthermore, the development and use of M&I learning materials should be worked out together, brought into context with multiple devices, and developed in comprehensive documentation. A special focus is put on methodology and approaches to support seniors in this digital-oriented learning and training. Furthermore, the organisations will use the gained experience and knowledge to promote Erasmus+ programs – and in this sense especially courses – to all generations in their home countries.

The project is funded by the Erasmus+ programme and aims to increase the knowledge and skills in the participating organizations to create and use M&I content, with particular attention to multiple devices and a specific focus on seniors.

- **Project information**
- **Start:** 1st November 2020
- **End:** 30th April 2023
- **Project number:** 2020-1-AT01-KA204-078005, InterMedia
- **Coordinator:** [Europäische Bildungsinitiative](#) (Austria)
- **Partners:** [EuphoriaNet srl](#) (Italy), [AJITER](#) (Portugal), [BrainLog](#) (Denmark)
- **Contact:** [intermedia\[at\]advanced-training.at](mailto:intermedia[at]advanced-training.at)

ABOUT THE PROJECT PARTNERS

AJITER

Youth Association of Terceira Island - AJITER, is a non-profit institution that was started in **April 2003**, starting from the essential objective of promoting and strengthening youth associations in the Azorean community, as an innovative way to promote the integration of integration into the community it is inserted in, and fight against generalized indifference that, at times, is very harmful to our youth.



Since then, there has been a lot of work developed, we have had a social and community intervention in the most varied **areas of relevance to youth**, from education for citizenship, through education for health, prevention of risk behaviour, solidarity, combating social exclusion, sports, promoting access to the new information society, enhancing the historical and cultural heritage of Terceira Island, among many others.

EuphoriaNet

Euphoria Net Srl is an Italian company set-up in March 2019 with the main scope of providing services in the project management field, in terms of supporting organizations in carrying out and managing projects as well as providing training on this topic. Euphoria is specialized in the educational field and works in projects related to bringing innovation in such fields.



The three main areas of activities are the following:

- [1] Project management: we follow all the aspects related to EU projects.
- [2] Training courses: we organize training courses especially for schools of any grade, Universities and associations on the following topics: project management, digital competencies, entrepreneurship, boosting STEM at school, EU citizenship, personalized learning, soft skills and innovative methodologies.
- [3] Organization of events and communication strategies: we organize dissemination strategies within projects, including the set-up of project branding, communication, mapping stakeholders, organizing, and coordinating events all over Europe.

Our headquarter is in Rome, but we travel all over Italy to deliver our training courses and to Europe to implement EU projects.

BrainLog

BrainLog is a non-profit organization developing and managing national and international funded projects focusing on innovation and education within business development, web and mobile applications, entrepreneurship, innovation within sport and wellbeing, non-formal education, and social inclusion in Denmark.



Europäische Bildungsinitiative EBI/EIE

The "Europäische Bildungsinitiative" EBI - (in English European Initiative for Education EIE) - is an international Private Non-Profit Education and Training Association located in Wiener Neustadt /Austria. EBI's mission is to endorse an innovative approach to education, training, and culture. Target groups are schoolteachers, teachers, and trainers in general education as well, in adult education.



The three departments of the EBI are a teaching unit, a technical department, and a special research group. The offered training focuses on project management, Flipped Learning 3.0, eLearning, Technology Enhanced Learning (and Teaching, TEL), Distance Learning, Online Distance Learning, Blended Learning, and other related topics.

The EBI/EIE is the coordinator of this project and regularly involved in European Projects (Erasmus+).





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Erasmus+ Programme
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