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INTERACTIVE TEACHING MEDIA

VV-MGS-008 - Media literacy interactively and for all



Česká zemědělská
univerzita v Praze



PEDAGOGICKÁ
FAKULTA
Univerzita Karlova



University of
South-Eastern Norway

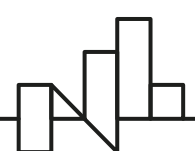
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Faculty of Education
Charles University

29.04.2024

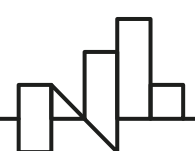
1.1 Interactive teaching media

- ITM are defined as digital sources that contain interactive elements in addition to classical elements such as texts, images, photographs, animations, videos, graphics or links. These interactive elements allow users to fully engage with the content (Červený, 2020).
- ***"Activation of pupils / students with emphasis on their direct participation (activity) in the teaching process, in their engaged involvement in teaching activities, in their own learning activities, in thinking and problem solving."*** (Maňák, 2011).



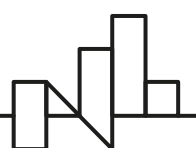
1.2 Forms of ITM

- Classifying interactive educational media according to their mode of delivery is a challenging process.
- Mainly since there have been countless different forms of digital educational resources on the "market" in the last three decades, the categorization of the form of implementation of educational media is difficult to grasp.
- According to the proclamation of the former National Institute of Education (NÚV, © 2016), there are a number of attempts to clearly organize or classify ITM.



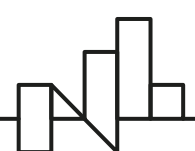
1.2 Forms of ITM

- To fulfill the objectives outlined in the Digital Education Strategy (in CZ: SDV), the Ministry of Education, Youth and Sport of the Czech Republic has created "**Quality criteria for digital educational resources supported from public budgets**" (NÚV, © 2016).
- The document sets out the basic requirements that must be observed both during the creation and subsequent distribution of ITM:
 - **Interoperability** (or multiplatform SW);
 - **Open Educational Resources** (OER);
 - **Availability** (online and offline);
 - **User friendliness** (intuitive and easy to use, offering standard user tools).



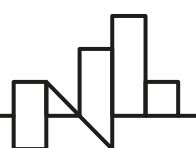
1.3 Individual elements of ITM

- "*There are various detailed taxonomies of the structural components of interactive educational media*" (Janko, 2017), but for the sake of orientation it is better to distinguish the structure into verbal, visual and interactive components:
 - ***Text;***
 - ***Visual elements;***
 - ***Spoken word and musical and audio (non-musical) elements;***
 - ***Interactive elements;***
 - ***Self-evaluation tools.***



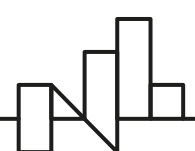
1.3.1 Text

- *"The editing of the text should focus on its basic communicative function, aiming to make the content as accessible as possible to the user."* (Tomanová, 2016).
- When creating ITM content, it is important to consider:
 - ***Comprehensibility and cohesiveness of the text*** (Čáp and Mareš, 2001);
 - ***Expertise*** (FEP, © 2016);
 - ***Structure*** (Pistorius and Olšanská, 2019);
 - ***Typographic and aesthetic design.***



1.3.2 Visual elements

- Media can accurately depict reality through various mediums such as photography, film sequences, realistic drawings, 3D objects, and virtual environments. Alternatively, they can present a more abstract representation of reality through simplified images, drawings, maps, and schemes. (Mareš, 1995).
- From a didactic perspective, media can serve various functions, including **decoration, representation, transformation, interpretation, and organization** (Svatoš, 2006).



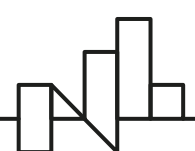
1.3.2 Visual elements

- According to Grunwald (2003), members of the net generation have a highly developed ability to understand visual objects due to their constant exposure to visual stimuli such as television, videos, and cell phones. They are able to transition quickly between reality and the virtual environment.



1.3.3 Spoken word and musical and sound (non-musical) elements

- The use of **spoken words** can benefit auditory learners who prefer sound stimuli when absorbing new information (Fleming, 1992).
- **Incorporating musical elements** can aid in cognitive transfer (Pastorová, 2018), leading to improved learning outcomes, even in subjects such as mathematics (Halliday, 2017).
- **Non-musical sound elements**, such as noise (blows, thunder, murmurs, creaking, etc.), can also be included (Sedlák and Váňová, 2013).



Interactive elements



1.3.4 Interactive elements

- Interactive elements in the field of ICT are dynamic effects that can positively impact the user's engagement and interest in the subject matter (321 CREATIVE CREW, © 2016). In the field of education, **they should contribute to intellectual and emotional stimulation, as well as promote user independence.**
- *"In this case, pupil or student activity refers to heightened and intensive engagement, stemming from both internal inclinations, spontaneous interests, emotional motivations, and personal needs, as well as conscious effort."* (Maňák, 1998).



1.3.4.1 Interactive elements - simple elements

 Decibel

Modulová charakteristika
Modulová charakteristika je (grafické) vyjádření závislosti velikosti přenosu elektrického obvodu na kmitočtu (úhlovém kmitočtu).

Fázová charakteristika
Fázová charakteristika je (grafické) vyjádření závislosti fáze přenosu elektrického obvodu na kmitočtu (úhlovém kmitočtu).

 Nevýhoda hodografu

5. Troufnete si již nyní sestavit jednoduchou pojmovou mapu, která by definovala některý z pojmů, jež důvěrně znáte: mobilní telefon, škola nebo diplomová práce? Sledujte své kroky při vytváření pojmové mapy a následně se přesvědčte, zda jste pracovali správně a zda i pojmová mapa má správné vlastnosti.

Zkuste si nakreslit jednoduchou pojmovou mapu pomocí nástroje níže:



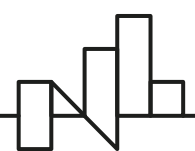
Kořen

Il est exprimé par : ?

Ce que vous dites est vrai.

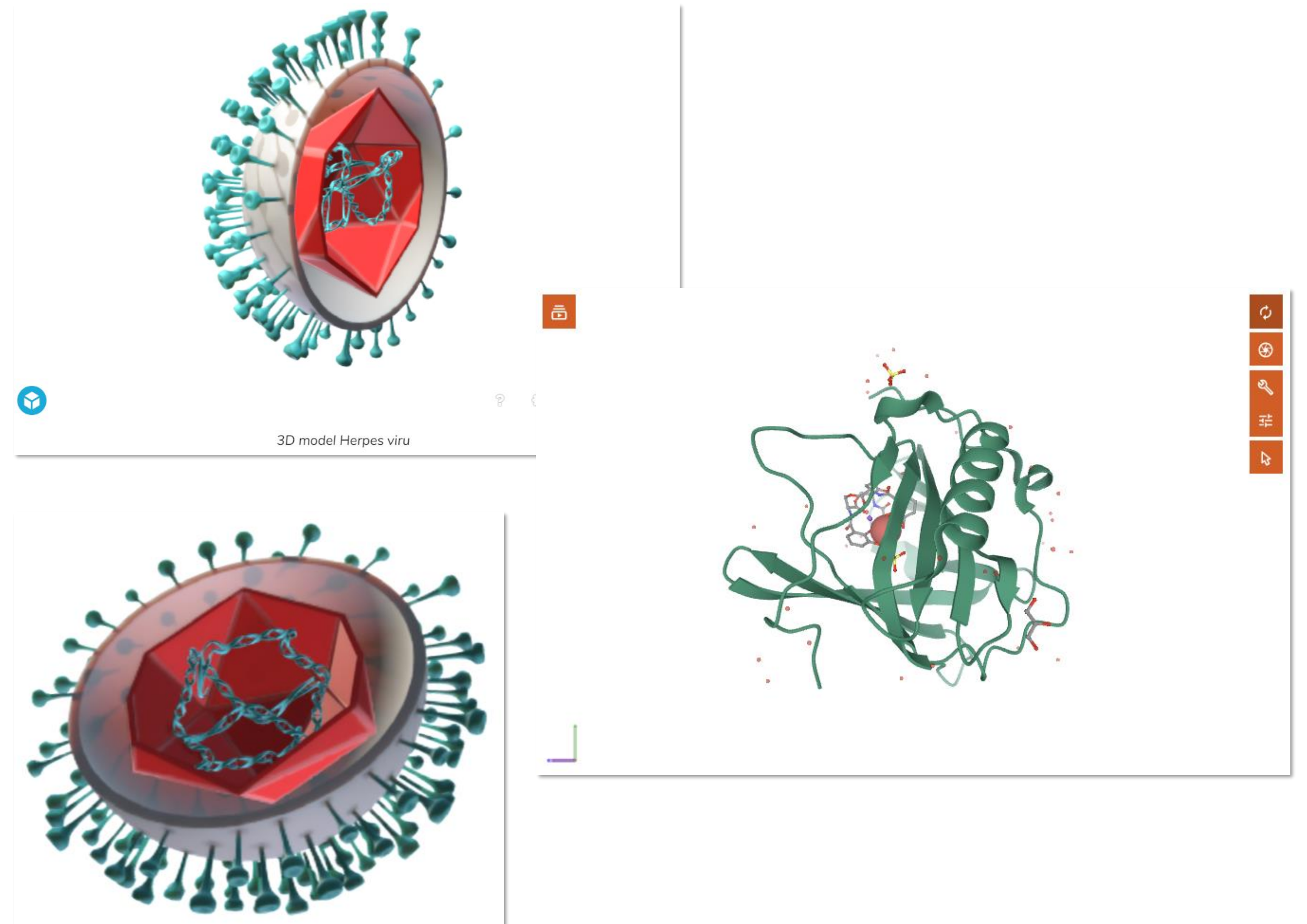
Il est exprimé par : ?

Shift à â ç è ê î ô û ù œ ' ?



1.3.4.2 Interactive elements - simulation

- **Simulations are considered one of the most effective e-learning tools** as they enable continuous interactive verification of interpretations and teaching using simulators in many fields of human activity, in contrast to simple elements.



1.3.5 Self-evaluation tools

- The self-evaluation (didactic) test is a tool for the systematic and objective assessment of educational outcomes in both dimensions, namely **in the breadth and quality of knowledge as well as in the level of skills.**
- The tests can be divided according to the following aspects (Havlínová, 2011, Byčkovský, 1982):
 - *Measured power characteristic (speed / level);*
 - *Degree of specificity of learning (teaching results / study prerequisites);*
 - *Performance interpretation (distinguishing / verifying);*
 - *Thematic range (monothematic / polythematic);*
 - *Time classification in teaching (entry / continuous / exit).*

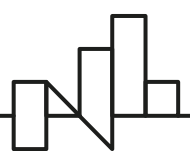


FutureBooks

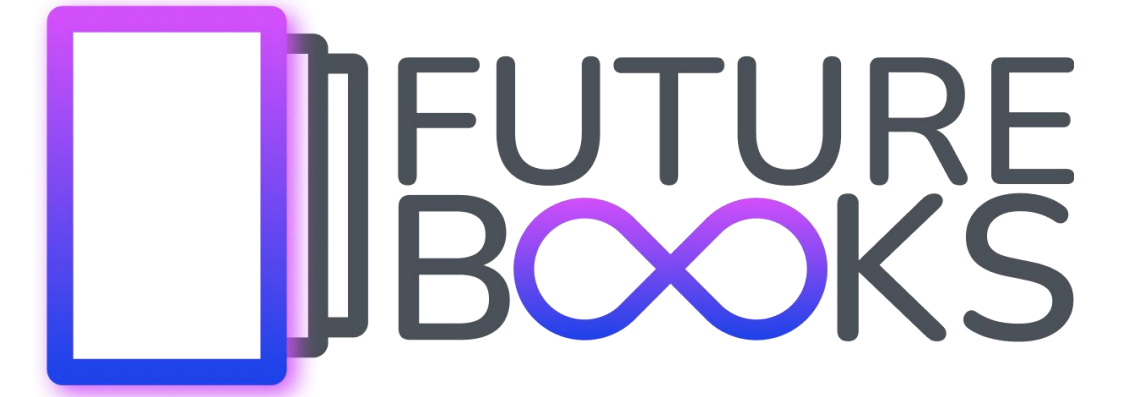


2.0 FutureBooks

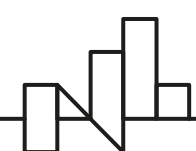
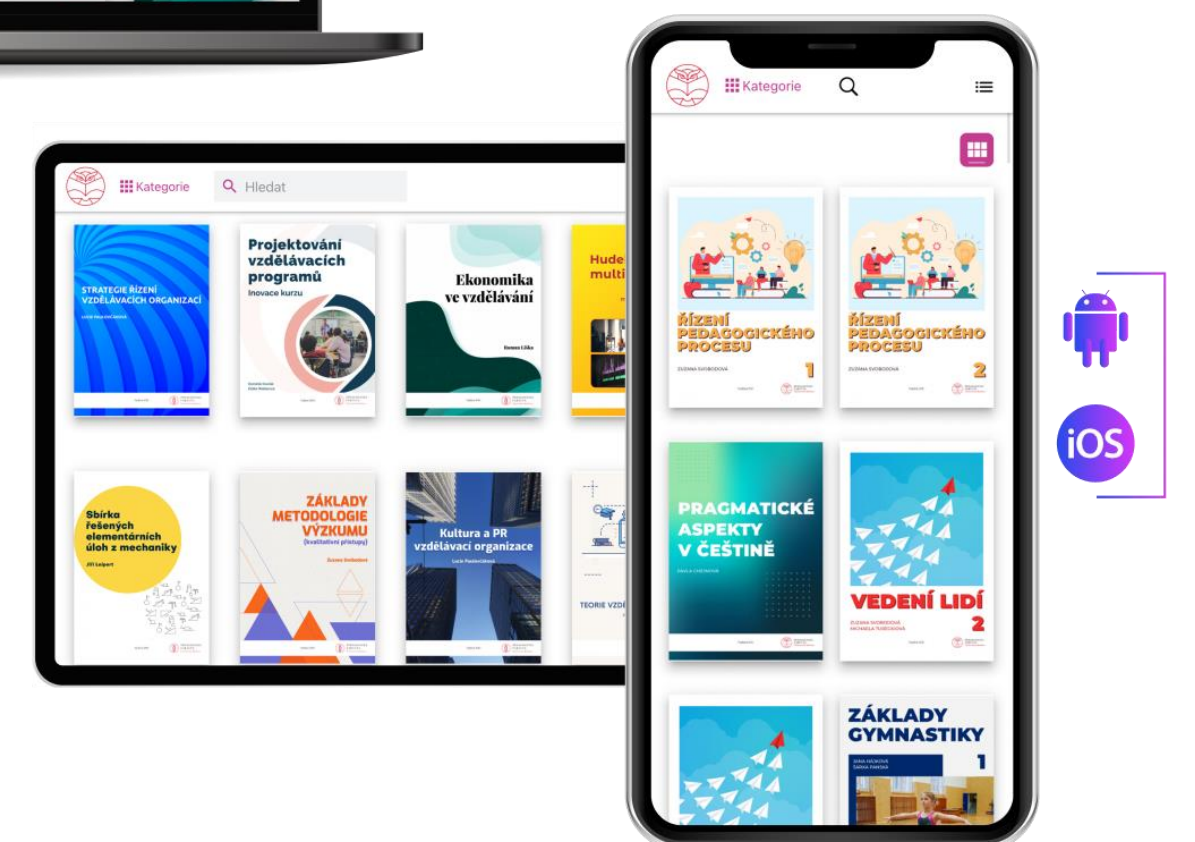
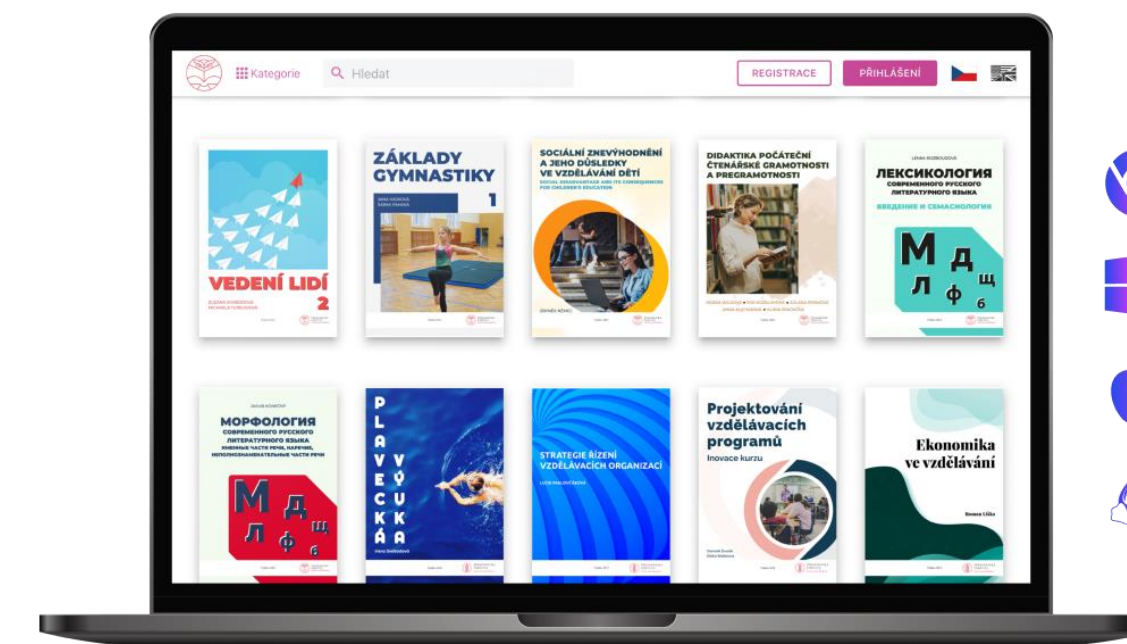
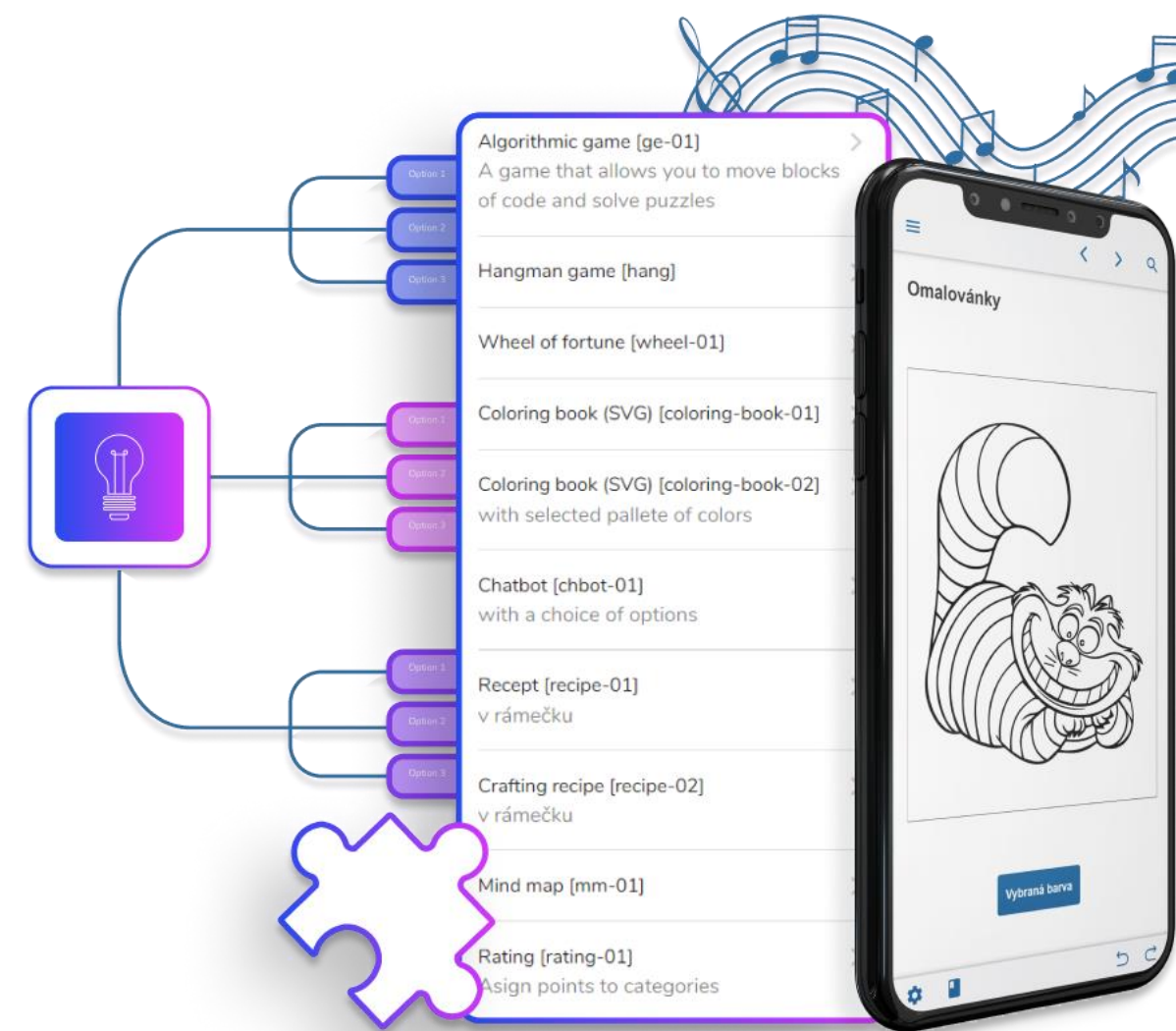
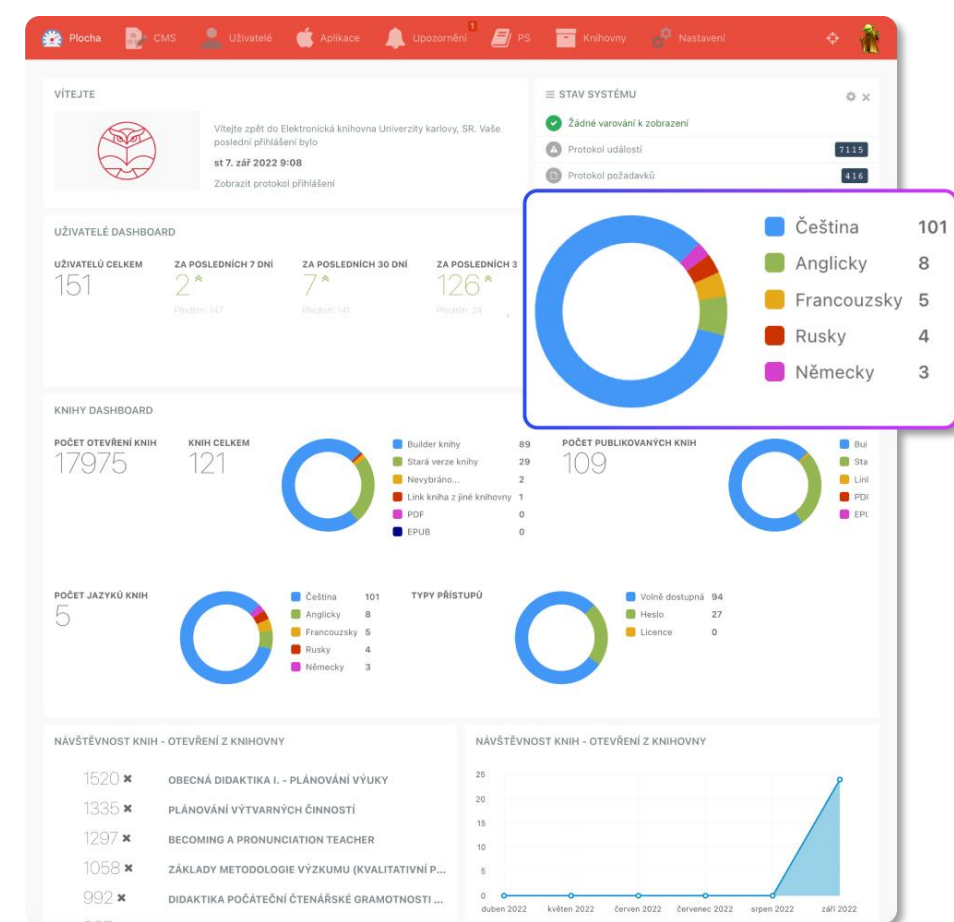
- The FutureBooks system is described as a publishing platform that facilitates the production and dissemination of predominantly interactive educational materials.
- It benefits from the involvement of the Faculty of Education at Charles University in its development.
- The architecture of the system includes multiple servers, such as media, publishing, and authentication servers, each serving distinct roles that support the creation, security, and distribution of content.



2.0 FutureBooks



- Although FutureBooks primarily utilizes the HTML5 markup language for creating Interactive Teaching Materials (ITM), it also supports the distribution of resources in various other formats, including PDF, EPUB, and more (FutureBooks, © 2020).



2.0 FutureBooks - Samples

- **Sample publication (chapter):**

<https://vscht.futurebooks.cz/book/interaktivni-vyukova-media//?/2-prvky-interaktivnich-vyukovych-medii/2-4-interaktivni-slozka-elementy-interaktivity/2-4-1-interaktivni-obsah-formou-aktivizujicich-prvku/2-4-1-1-interaktivni-a-simulacni-prvky/>

- **To gain a better understanding, you can peruse the ongoing publications (textbooks) of the Faculty of Education at Charles University and other affiliated institutions.**

<https://cuni.futurebooks.cz/>

- **Interactive Header + Interactive Command Line (IT Sharkie publication):**

<https://op51.futurebooks.cz/book/it-sharkie-sitove-technologie-bezpecnost/?/prikazova-radka/>

- **Different types of exercises:**

<https://cuni.futurebooks.cz/book/einfuhrung-die-phonetik-und-phonologie-des-deutschen-ausgewahlte-kapitel/?/1-phonetik/>

- **A mind map editor (Questions and Tasks) and an open-ended question form:**

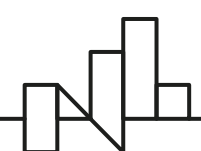
<https://cuni.futurebooks.cz/book/pojmove-mapy-ve-vzdelavani/?/zakladni-charakteristika-studie/otazky-a-ukoly-2/>

- **Cards and various types of exercises:**

<https://vovcr.futurebooks.cz/book/kmitoctove-charakteristiky/?/5-cviceni/>

- **Special characters in the exercise (similarly notes, etc.):**

<https://cuni.futurebooks.cz/book/nahlednuti-do-syntaxe-francouzskeho-jazyka/?/legenda-k-symbolum/>



MedGram



2.1 FutureBooks - MedGram


- The course distribution conducted via partners (part of regional networks) composed of various stakeholders in education (secondary vocational schools, libraries, youth organizations, e-senior platforms).

medgram.cz
rozumím médiím

Home

Our courses

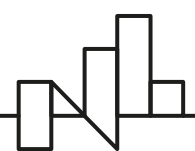
Contact

English 

NAVIGATING THE MEDIA LANDSCAPE: A Guide to Understanding

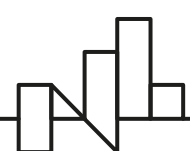
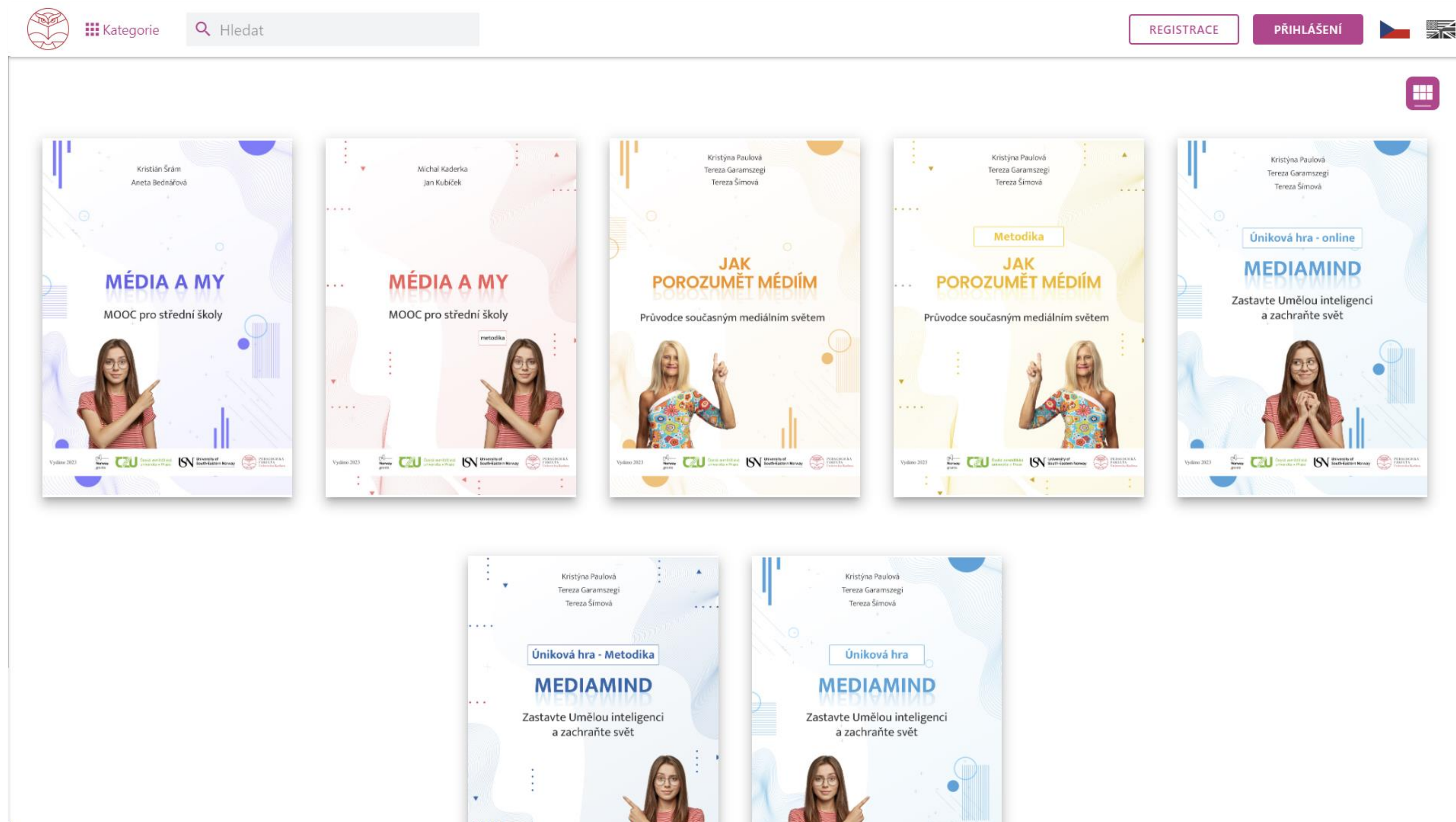
The cultivation of media literacy, an increasingly critical yet widely undervalued aspect of the Czech education system, serves as the cornerstone of our project.

[Learn More About the Project](#) →



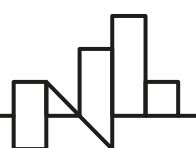
2.1 FutureBooks - MedGram

- **Sample publication (chapter):**
- <https://cuni.futurebooks.cz/kategorie/31-mooc-medgram>



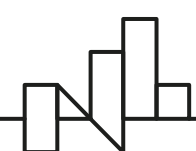
3. Conclusion

- The need for interactive teaching media is supported by a 2017 study conducted in Sweden and Lithuania.
- **The study, which involved an online questionnaire survey of students, revealed that they expect elements in eBooks that provide a more engaging experience, rather than just simple electronic text** (Maceviciute, Wilson, Gudinaivičius, Shuminas, 2017).



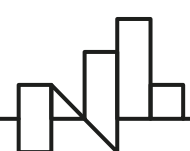
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