Universal IT Support Design for Engineering Education

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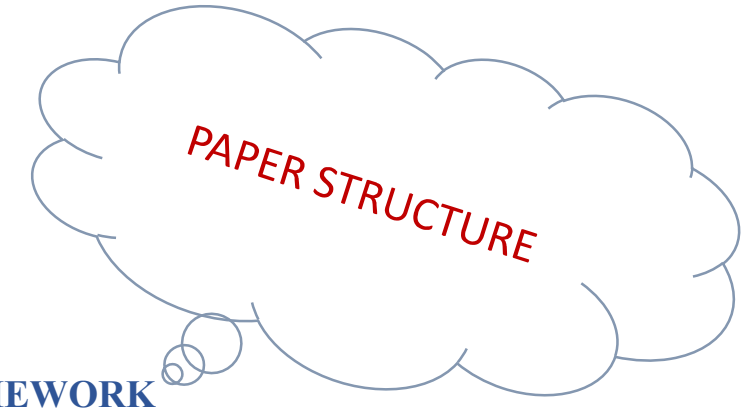
- From the point of view of integrating IT into teaching, **current technologies do not provide a universal solution for teachers' personal support**
- Digital technologies **have a shorter lifespan than required** by teachers and educational processes
- As a result, technology cannot be adapted to a wide range of teaching activities, and instead, **teachers have to adapt to the technology**
- We present a **universal solution for personal support** to the integration of IT into university teaching and learning, self-study, publishing, research, ...
- It is **an interdisciplinary approach** using **2 educational software**, **communication channels** and **combined offline/online infrastructure**) which can be used for any form of engineering or STEM teaching

- The uniqueness of our solution is based on the design of so-called **virtual knowledge,** which **makes it possible to insert concentrated educational content** in the form of text, images, audio and other computer files, in a suitable way
- From this **virtual knowledge**, educational **knowledge tables are created and controled** using WPad educational software
- WPad allows for **conversion of the tables into HTML format** and their placement on the faculty's virtual learning space or the web
- In this paper, we describe the use of this system and how it works on an infrastructure developed for the integration of IT into teaching
- The automation of the teacher's work through the **creation of educational packages** is described (**including applications for visually impaired people**)



INTRODUCTION

CONCEPTUAL FRAMEWORK

Principle of development of educational software

Software adaptation for teaching undergraduates

Comparison of WPad software with other solutions

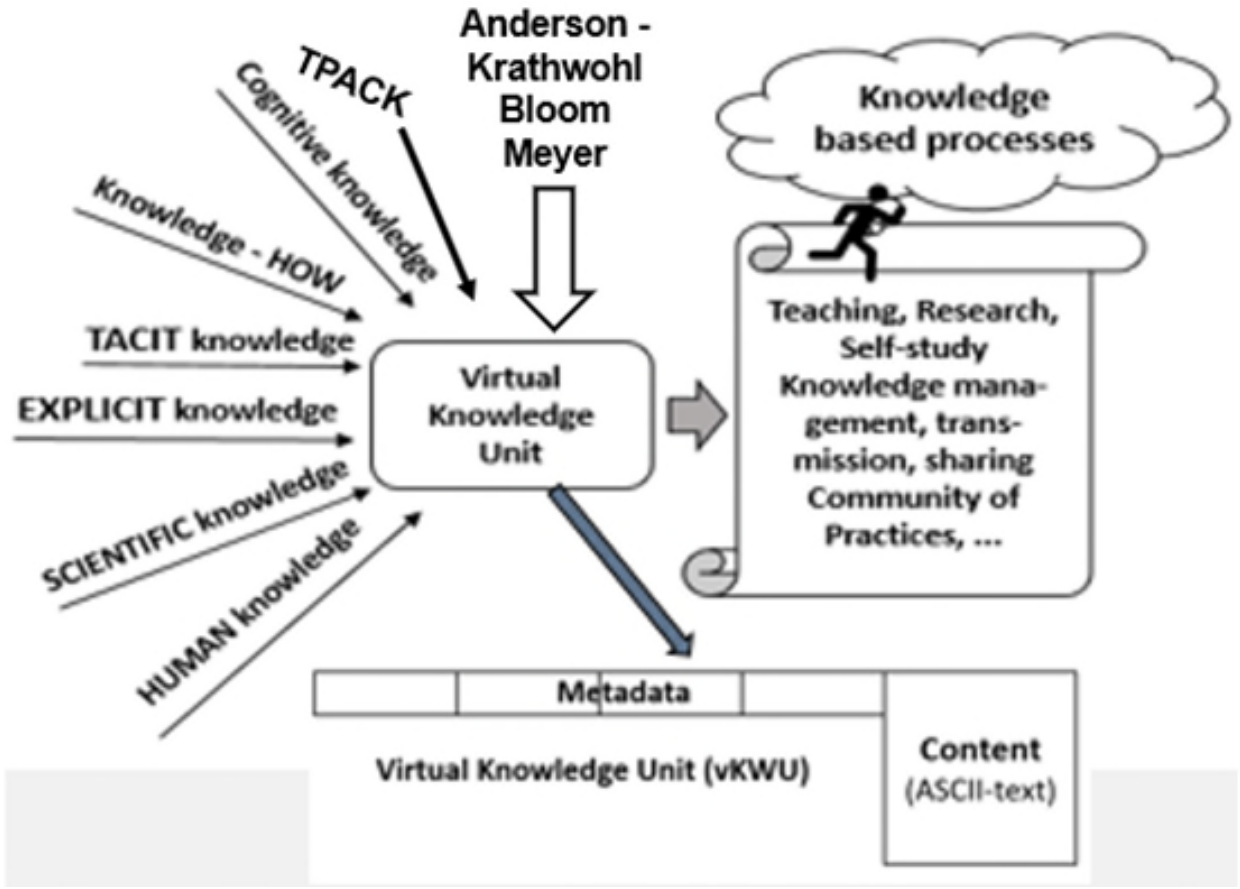
IT INFRASTRUCTURE FOR TEACHING AND RESEARCH

SOME ASPECTS OF ACTUAL OUTCOMES

Teachers ***Students*** ***Black Box Principle***

EXAMPLES FROM TEACHING AND RESEARCH

Virtual knowledge representation for the automation of knowledge-based processes



Educational knowledge is inserted as meta-data and content into the knowledge tables

Screenshot of the PIKS communiction channel

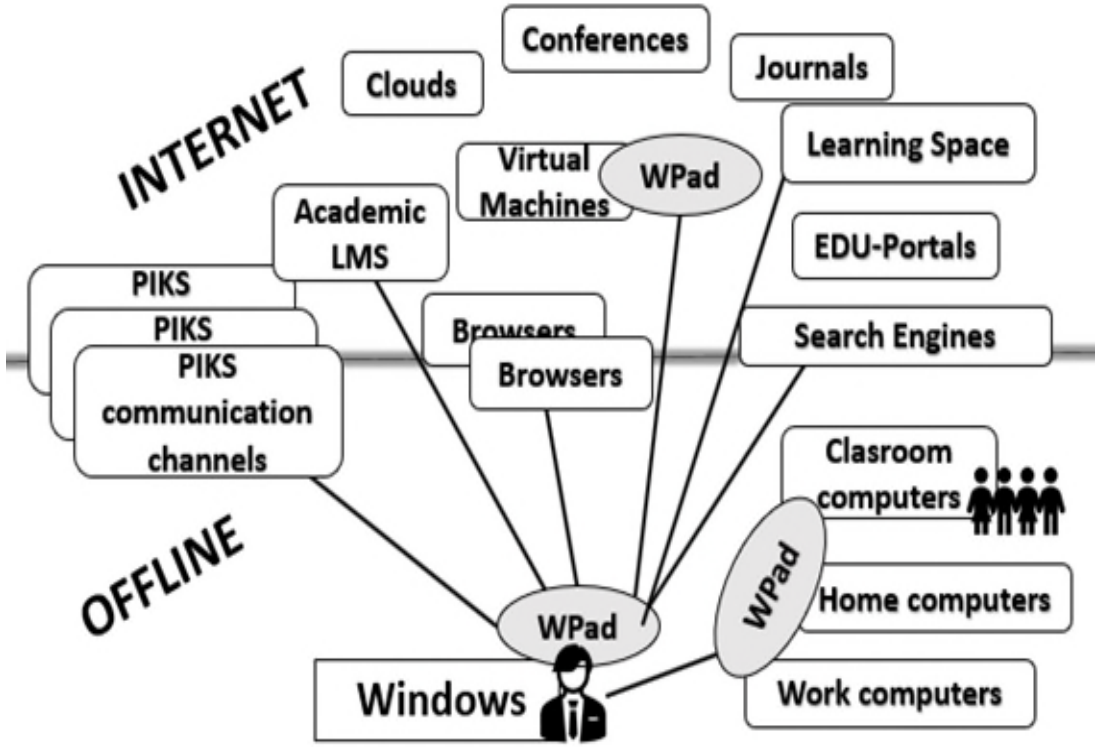
P I K S (Personal Information and Knowledge System)

- **HOME**
- [Delete records with star:*]
- [INSERT FORM]
- [ap_select 2]

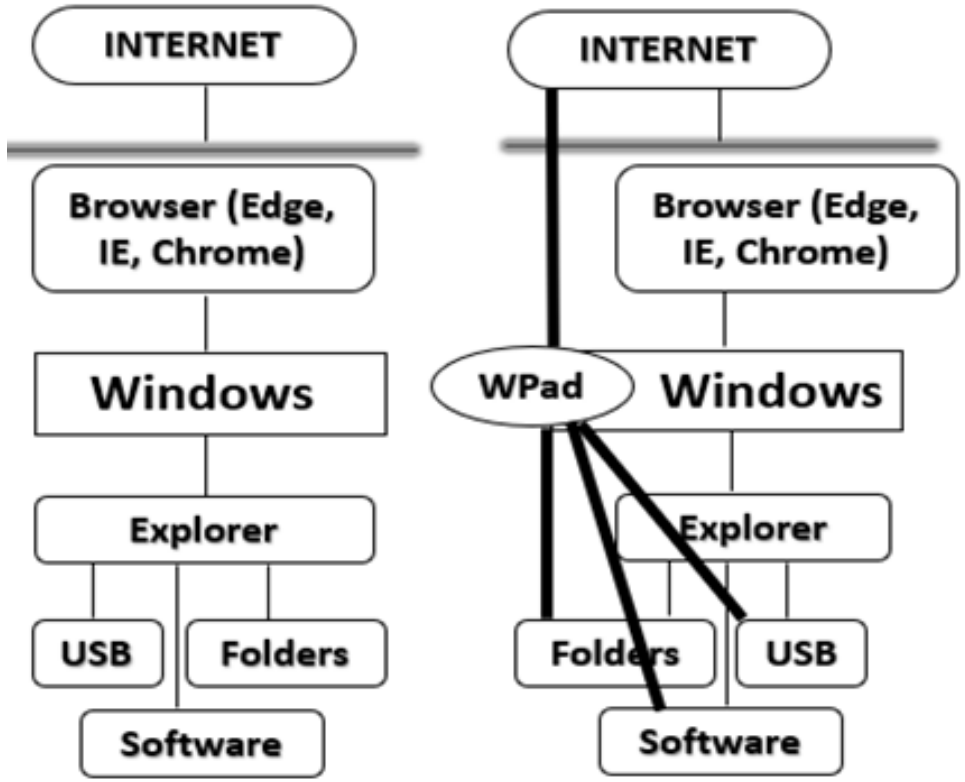
Database Connection succesfull :: Spojenie s databazou nadviazane => *15.Nov.2021*

[CATEGORY]	[TOPIC]	[Sub-Category]	[More]	[DATUM-NAME]	[CONTENT]
[Go] PUBLISHING	Publikovaný článok do Fórum manažéra	JOURNALS	Výstup v rámci riešenia projektu VEGA 1/0101/18	2021-02-20 AP	SELECTED ASPECTS OF THE DESIGN OF INFO OF MANAGEMENT PROCESSES OF MONITOR WORK ENVIRONMENT FACTORS IN MACHIN

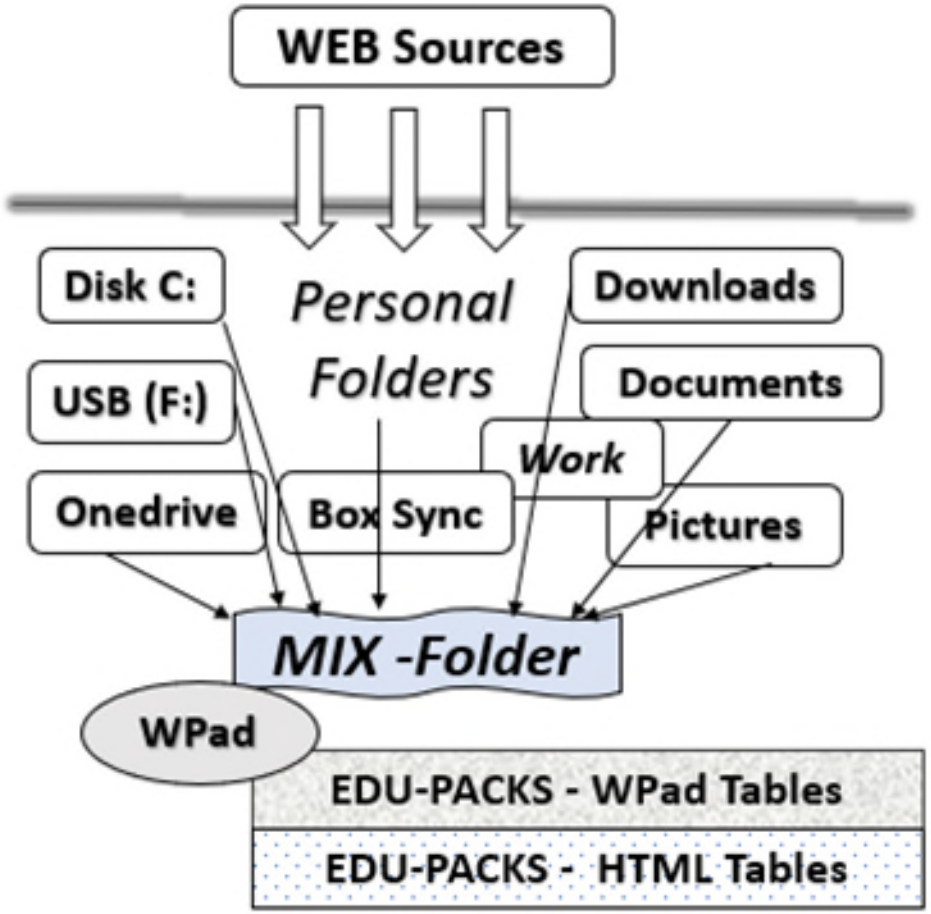
A teacher's personal IT infrastructure



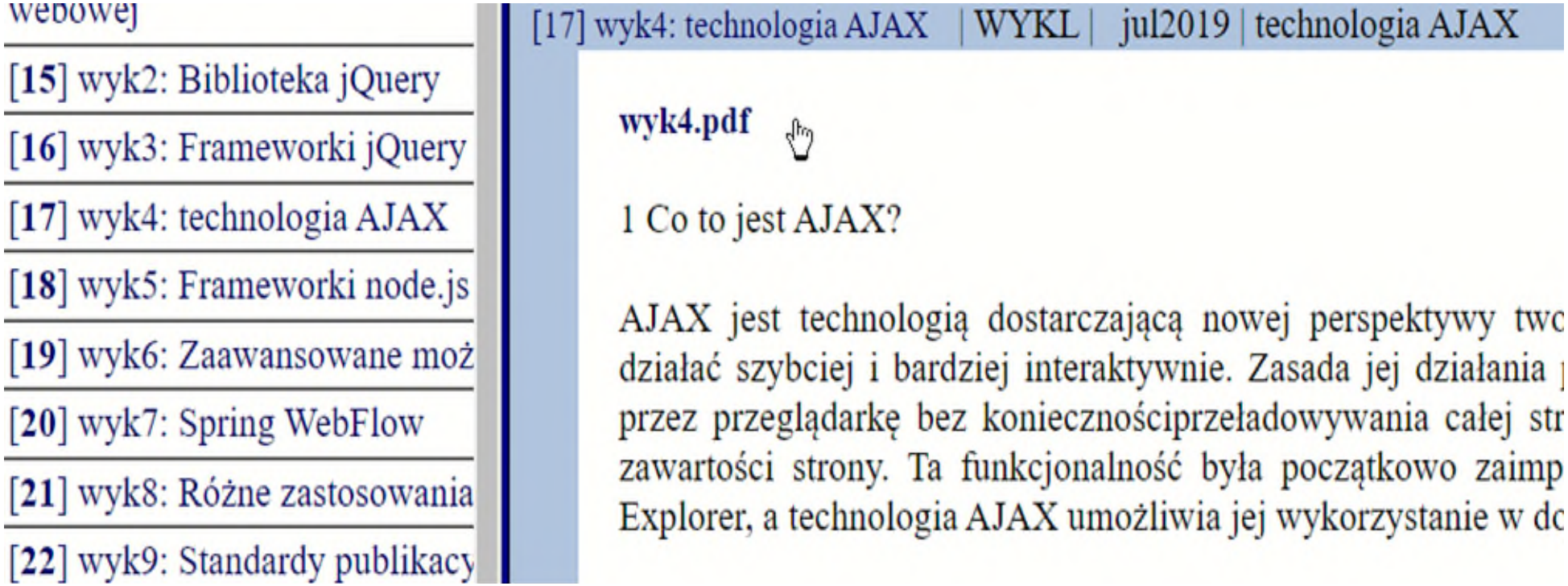
1. **Direct connections between WPad tables with online bypassing browsers**



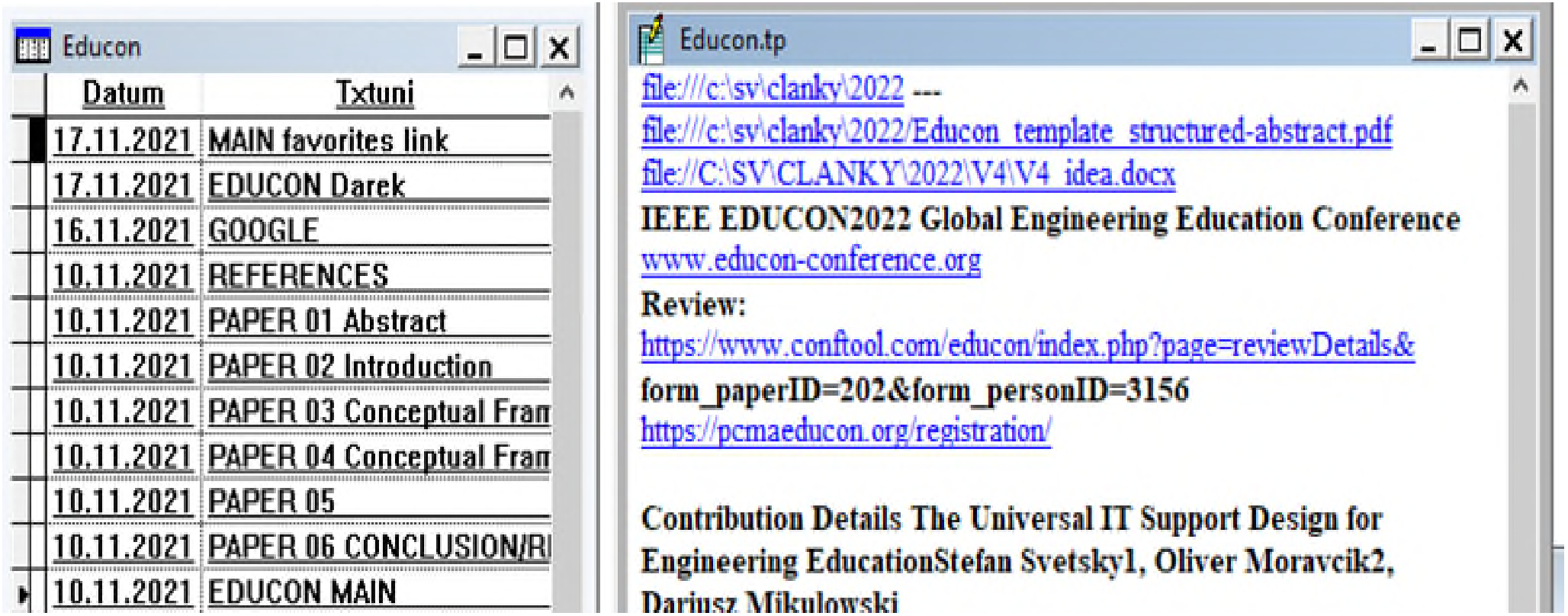
Principle used to create educational packages



Example of the creation of an educational package (BVI)



How WPad table was used when writing our paper



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Thank you for your attention

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