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Newly Developed Portal Framework is Being Introduced in the Hungarian Tertiary Education

Introduction

Appropriately constructed and properly structured instructor portals with useful content are indispensable for the students of the digital age. A sophisticated and well-crafted website facilitating the sharing of proper information, course materials, and auxiliary texts is a reliable starting point for a student. A well-known instructor's web page and the attendant link collection represent a much more authoritative source than any hit list provided by a search engine. Consequently, the need for such scientifically sound instructor portal is beyond dispute. Yet an instructor without a professional informatics background hardly has the theoretical or practical foundation to construct such a portal. Said portal should be updated on a daily basis, facilitate the sharing of educational auxiliary materials, and allow the fast provision of information for students on the relevant course-related changes. The quantity, quality, and structure of data and the respective ability to support the education process raise further questions. Based upon consultations with instructors and students I propose an easily manageable yet effective portal model. Accordingly my approach assuring simplicity and transparency includes only the essential elements as in addition to a framework system I forward a philosophy providing adequate support both to teaching and learning.

1. The design process

A wide variety of developmental principles and methods were utilised during the design of the basic concept of the system. Consequently, I relied on the User-Centred Design (UCD) and the Human − Computer Interaction (HCI) principles along with the Usability factors approach forwarded by Jakob Nielsen in addition to the e-Learning Evaluation Quality Model (EEQM) developed by Marvromoustakos− Papanikolau and the general guidelines of the Accessibility theory.

During the system development process I also adhered to the latest international web standards of the W3C (World Wide Web Consortium). Consequently, the codes are valid according to the HTML5 and CSS3 standards, and the developmental effort meets the "A" level requirements specified by the WCAG 2.0 standards. It is noteworthy, that most instructor websites do not fulfil said crite-

ria, and the extent of said discrepancy is the subject of my current statistical research.

2. The structure of the portal

2.1. The main sections and the opening page

The content of the webpage is organised into three main sections:

- general information on the instructor and data pertaining to availability;
- instruction block (details on the courses taught)
- scientific work and research.

Pre-defined menu points (*Introduction, Courses, Research*) represent the respective segments. It was important to establish a separate menu point for the dissemination of the results of scholarly research under the button titled *Publications*. However, instructors are free to include additional menu points, change the point titles while customizing their own website to reflect the particular instruction, research, and professional priorities.

Three other functions were added to my webpage, the continuously updated news, calendar events, and the tag cloud. These features are available for anyone at the main page, and the course-specific information is accessible for students registering for the class. Furthermore, each course includes a forum feature providing communication options for students.

On the basic version of the *Main Page* as indicated below other contents selected by the instructor are included in addition to news and calendar events.
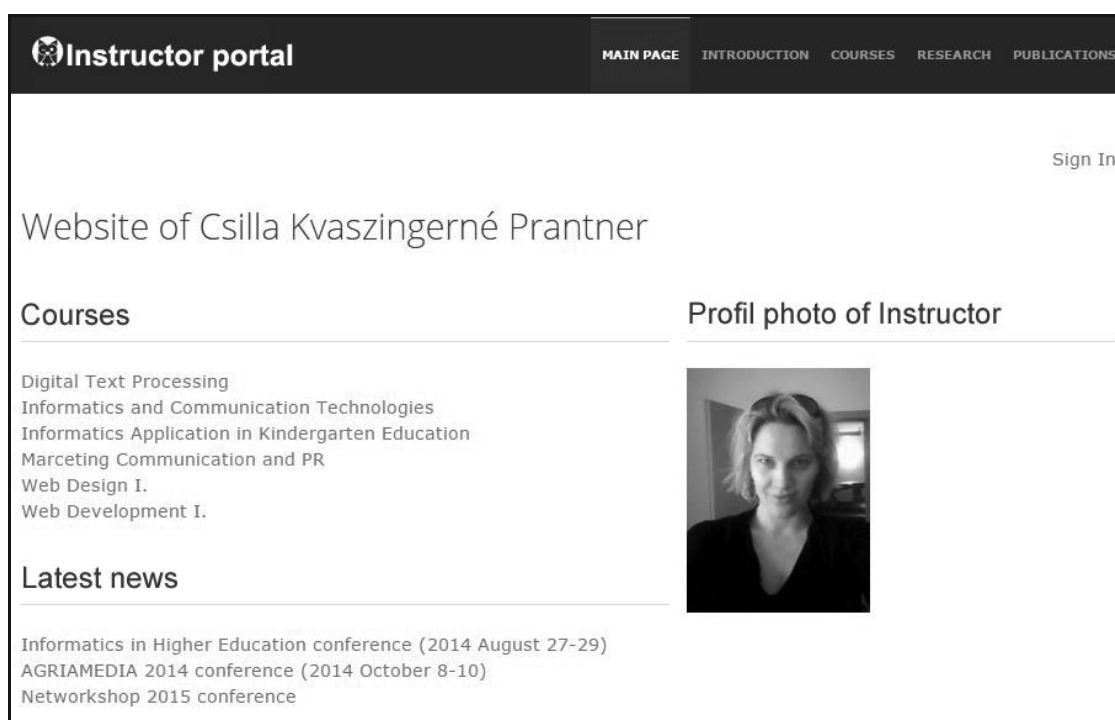

Fig. 1. The opening page of the instructor website

2.2. Information on instructor

Under the *Introduction* menu point the following information is included: photo of the instructor, general information, organisational details (Faculty, institute, department) position, brief personal statement, availability, picture gallery, curriculum vitae, office hours, along with the link to the Moodle surface.

Fig. 2 shows a section of the *Introduction* menu point becoming visible after scrolling. Based upon feedback received from colleagues teaching visual culture, design, graphic drawing, photo, multimedia and film-related subjects, my model includes a gallery section revealing the personal side of the given instructor.

The content of the webpage can be uploaded or modified by clicking on the *Edit* link located at the top of the page and becoming accessible after signing in. (this is not visible due to the scroll down feature).
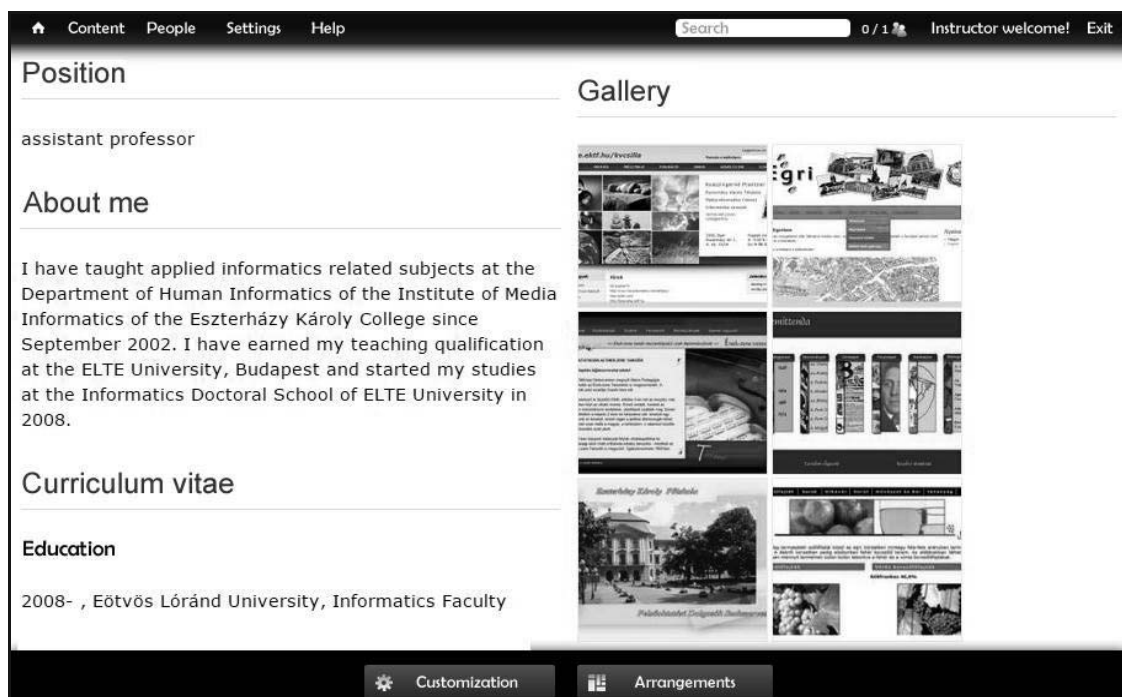
Fig. 2. A section of the Introduction page, the administration menu, and the buttons facilitating customization

2.3. The customization options and the administration surface of the given instructor webpage

When the instructor signs in, the so-called administration menu appears on the left side of the upper band and the web page can be customized (Figure 2 shows the administration surface of a registered instructor) The administration menu helps the instructor to create new content (pages, courses, news, and calendar events) and menu points along with processing the data of students registered for his or her course. Other options include viewing or making comments, checking or modifying accessibility options, and perusing the webpages of stu-

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dents. The administration menu enables the instructor to modify the respective information available at the given website, including date and language as well.

The top right section of the screen displays the instructor's user name and upon a click at this button the data on the given page can be changed, and the password, or even the e-mail address can be modified. The system is similar in case of students as they need user name and password for entry on the given page. The instructors can register students within the system as well

The bottom of the page includes two large size buttons: *Customization* and *Modification of Arrangement* enabling the instructor to make his or her website unique. Clicking on the *Modification of Arrangement* option allows the instructor to choose from pre-defined arrangements specifying column width and column numbers. Clicking on the *Customization* button the content units attached to panels easily identified by the teacher via the drag and drop function become visible. The position of a certain "Organisational unit" in a given column can also be specified along with its location within a vertical sequence (before or after a set component). Fig. 3 shows the "Organisational unit" panel during transfer, the yellow area indicates the original place or location of the given unit, from where it was moved.
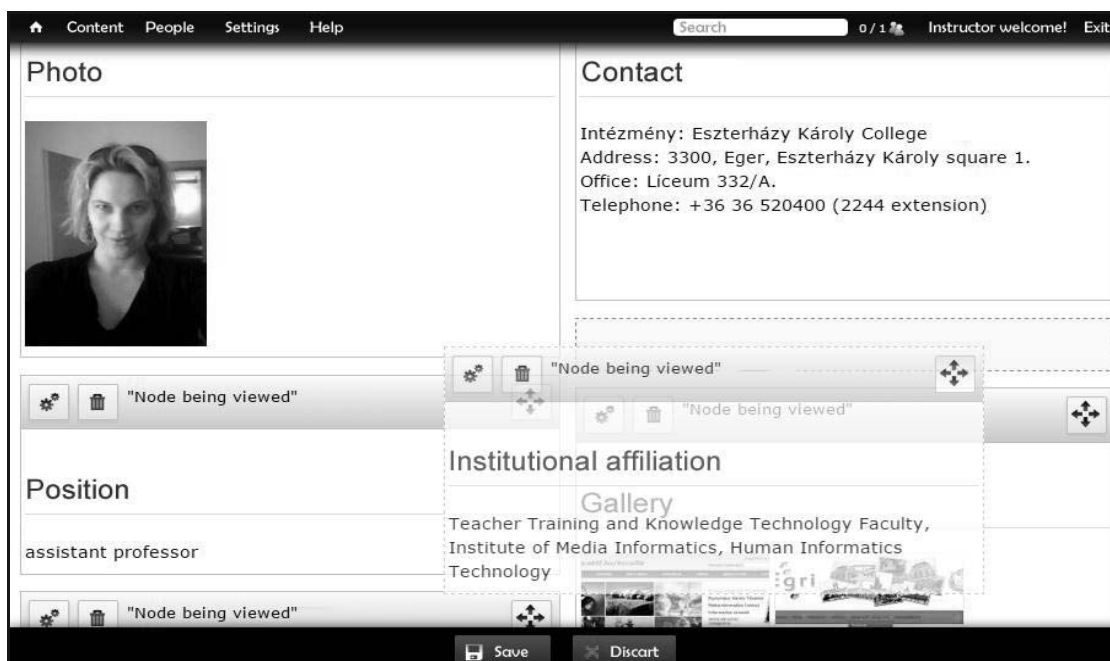
Fig. 3. The customization of the Introduction page

After completion of the Organisational unit transfer the instructor can either accept or discard the modifications and can indicate this by the buttons located at the bottom of Figure 4. The arrangement of the *Main page* and *Courses* page can be changed by the instructor. The students are not authorized to make these changes as they can see only the arrangements made by the teacher.

2.4. The Courses menu point

The Course page shows all the courses taught by a given instructor. Clicking on a specific course provides all information including the title, thematic structure, requirements, and assigned readings. This information is available for non-registered visitors as well.

Students registered in the system indicate their course selection to the instructor. The instructor processes the requests and allocates the students to the given courses. Students registered this way can access further information including auxiliary materials, external materials, the description of class assignments, the link to the Moodle system, news, calendar events, course tags, the course gallery content, and can read or make comments related to the courses. If the instructor does not turn off the e-mail function, the news, calendar remarks, and comments are forwarded to registered students via e-mail as well.

Course registration is valid for 1 year, and the system generates a warning to students on the expiration of their registration. Registration, however, can be extended for another semester via clicking on a link. The aim of this feature is to prevent the accumulation of users within the system.

2.5. The Research Area and Publication site

Since instructors maintain a wide variety of scholarly activities and research, there are no set guidelines on what kind of information should be shared by the given instructor at his or her webpage. Moreover, I would not like to make any such specifications either. The owners of web portals are free to create, develop and customize this page with additional menu points and sub-points.

The same applies to the indication of publications where the given page (*Publications*) could include links along with a gallery to which pictures can be uploaded.

Summary

In our currently accelerated and digitalized world it is important for instructors, researchers, and experts of higher education institutions to establish their own webpages without a specific background in informatics. I believe that instructors themselves should be able to coordinate and control contents related to their work by this innovative, properly presented and easy to handle resource. The system provided to instructors without charge is complemented by web 2.0 options facilitating customization as well. I hope that my model provides effective support for the teaching and research effort of instructors while assisting students as well.

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Abstract

My research can be positioned to the border-land of the applied computer science, didactics and human-computer interaction. In the frame of my PhD thesis I make an attempt to develop and implement a framework to supply a deficiency in the informatic support of tertiary education. The aim of the presentation is to review the usage of the developed web interface.

The primary goal of the newly implemented system is to support the instructors unconversant in informatics to facilely manage the everyday round of administrative duties. Additionally the developed web surface also enables to publish scientific activities, preliminary results of certain research, scientific presentations and public project reports. The system provides the ideal tools to allow the customized construction and organization of the content to be shared.

The user interface enables to design the instructor's portal, visualize and fill with content in an easy manner. Furthermore the framework also facilitates the regular maintenance and update of the portal without making use of any IT assistance.

Keywords: Educational portal, User Centered Design, Web development, Tertiary education, Drupal 7.