

The Design of an Information System for Tracking the Internal Functioning of the Educational Process

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The latest technologies are penetrating all spheres of life, changing her view of the world, behavior, the possibility of solving different kind of problems. Innovation education – a purposeful process of partial changes leading to modification of objectives, contents, methods, forms of training and education, adaptation of the learning process to new requirements. Higher education is based on educational resources.

The project focuses on one of the most important unsolved problems – the creation of an electronic diary for counting and monitoring of attendance and student and student.

The relevance of this subject area is the rapid penetration of new technologies in the educational process. Almost 10 years the technology that is prevalent in various countries around the world are trying to introduce in Ukrainian schools. But while there is no one single project that would allow smooth and proper operation of online journals and diaries.

That is why the theme of this work is to create a mobile app ProgressTrack, whose main task will be establishment of service of electronic diaries and magazines, tables and graphs of progress, Analytics, database to website creation, external and internal communications.

Electronic grade book for school is the latest accounting system of achievement for schools and other educational institutions. Great tool for administration and teachers, which facilitates their daily routine paper and electronic student diary is a convenient tool for parents to monitor their child's progress in school and to be in touch with the school.

Some aspects of pedagogical techniques (theoretical, methodological bases of designing of technology; organizational and pedagogical conditions of the introduction of technology; modeling content technologies) were covered in the thesis V. Degtyareva, O. Evdokimov, L. Kidalova, M. Lazarev, A. Popovich, I. Sinelnik, O. Tech, S. Jakubowski, L. Yaroshchuk

The selected research topic can be justified by the outdated methods of introduction of these important documents, the slow pace of counting and ordering, the deliberate falsification of data, loss of information in the paper, the environmental situation related to the clearing of forests for production of paper.

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tool for parents to monitor their child's progress in school and to be in touch with the school. The goal of the project is to:

- Forming a curriculum for teachers
- Creating student portfolios (entering personal data of student and his / her parents)
- Generating school attendance / performance statistics
- Posting news and announcements
- Automatic lesson schedule generation
- Organizing playgrounds for teachers and parents
- Use of the electronic journal as an add-on to the management system of the educational organization

Assessing the positive changes with the advent of the project on the network, we can conclude that its effectiveness will be high, and the application itself will be in demand among users, who will be able to evaluate its benefits and innovation among other products on the market. Thus, we can conclude that it is advisable to create this startup and bring it to life.

References

15. Systems and methods for providing a dynamic continual improvement educational environment. - Access mode: <https://www.hemocue.com/en/knowledge-center/tools-apps/my-riblood-donor-app>
16. Educational methods and devices - Access mode: <https://patents.google.com/patent/US4044476A/en>
17. Korzh, R., Fedushko, S., Peleschshyn, A.: Methods for forming an informational image of a higher education institution. In: *Webology*, 12(2), Article 140. (2015)
18. Zdebskyi, P., Vysotska, V., Peleshchak, R., Peleshchak, I., Demchuk, A., Krylyshyn, M.: An Application Development for Recognizing of View in Order to Control the Mouse Pointer. In: *CEUR Workshop Proceedings*, Vol-2386, 55-74. (2019)
19. Dilai, M., Onukevych, Y., Dilay, I.: Sentiment Analysis of the US and Ukrainian Presidential Speeches. In: *Computational Linguistics and Intelligent Systems, COLINS*, 2, 60-70. (2018)
20. Берко, А.Ю. Intranet архітектура інтелектуальних систем електронного навчання / А.Ю. Берко, В.А. Висоцька // Інформаційні системи та мережі. Вісник Національного університету "Львівська політехніка". – Львів 2001. - № 438. – Стор.3-10.
21. Інтерактивна взаємодія та зворотній зв'язок в системі дистанційного навчання / Р.О. Голошук, В.А. Висоцька // Інформаційні системи та мережі. Вісник Національного університету "Львівська політехніка". – Львів 2002. – № 464. – Стор.44-53.
22. Висоцька, В.А. Система опрацювання структури електронного підручника / В.А. Висоцька // Інформаційні системи та мережі. Вісник Національного університету "Львівська політехніка". – Львів 2003. – № 489. – Стор.49-63.
23. Голошук, Р.О. Математичне моделювання процесів дистанційного навчання / Р.О. Голошук, В.В. Литвин, Л.В. Чирун, В.А. Висоцька // Інформаційні системи та

- мережі. Вісник Національного університету “Львівська політехніка”. – Львів 2003. – № 489. – Стор.100-109.
24. Шаховська Н.Б. Методи та засоби дистанційної освіти для заохочення і залучення сучасної молоді до проведення самостійних наукових досліджень / Н.Б Шаховська., В.А. Висоцька, Л.В. Чирун // Інформаційні системи та мережі. Вісник Національного університету “Львівська політехніка”. – № 832. – Львів, 2015. – Стор. 254-284.
 25. Shakhovska Natalya. Intelligent Systems Design of Distance Learning Realization for Modern Youth Promotion and Involvement in Independent Scientific Researches / Natalya Shakhovska, Victoria Vysotska, Lyubomyr Chyrun // *Advances in Intelligent Systems and Computing*. *Advances in Intelligent Systems and Computing* 512. Natalya Shakhovska Editor. Selected Papers from the International Conference on Computer Science and Information Technologies, CSIT 2016, September 6–10 Lviv, Ukraine. – ISSN 2194-5357 ISSN 2194-5365 (electronic). - ISBN 978-3-319-45990-5 ISBN 978-3-319-45991-2 (eBook). - DOI 10.1007/978-3-319-45991-2. - Library of Congress Control Number: 2016950408. - Springer International Publishing AG 2017. - PP. 175-198.. – Access mode: <http://www.springer.com/us/book/9783319459905>.
 26. Lytvyn Vasyl. Distance Learning Method for Modern Youth Promotion and Involvement in Independent Scientific Researches / Vasyl Lytvyn, Victoria Vysotska, Liliya Chyrun, Lyubomyr Chyrun // *DATA STREAM MINING & PROCESSING*. Proceedings of the 2016 IEEE First International Conference on Data Stream Mining & Processing (DSMP). – August 23-27, 2016. – Lviv, Ukraine. – PP. 269-274.
 27. Antonii Rzhеuskyi, Orest Kutуuk, Victoria Vysotska, Yevhen Burov, Vasyl Lytvyn, Lyubomyr Chyrun. The Architecture of Distant Competencies Analyzing System for IT Recruitment // 2019 IEEE 14th International Scientific and Technical Conference on Computer Science and Information Nechnologies (CSIT’2019) : proceedings. – Volume 3. – 17-20 September 2019, Lviv, Ukraine. – PP. 254-261.
 28. Shakhovska, N., Vovk, O., Hasko, R., Kryvenchuk, Y.: The method of big data processing for distance educational system. In: *Advances in Intelligent Systems and Computing*, 689, 461-473. (2018)
 29. Rzhеuskyi, A., Kutуuk, O., Voloshyn, O., Kowalska-Styczen, A., Voloshyn, V., Chyrun, L., Chyrun, S., Peleshko, D., Rak, T.: The Intellectual System Development of Distant Competencies Analyzing for IT Recruitment. In: *Advances in Intelligent Systems and Computing IV*, Springer, Cham, 1080, 696-720. (2020)
 30. Shakhovska, N., Vysotska, V., Chyrun, L.: Features of E-Learning Realization Using Virtual Research Laboratory. In: *Proceedings of the International Conference on Computer Sciences and Information Technologies, CSIT*, 143–148. (2016)
 31. Antonii Rzhеuskyi, Orest Kutуuk, Victoria Vysotska, Yevhen Burov, Vasyl Lytvyn, Lyubomyr Chyrun. The Architecture of Distant Competencies Analyzing System for IT Recruitment // 2019 IEEE 14th International Scientific and Technical Conference on Computer Science and Information Nechnologies (CSIT’2019) : proceedings. – Volume 3. – 17-20 September 2019, Lviv, Ukraine. – PP. 254-261.
 32. Syerov, Yu., Fedushko, S., Loboda, Z.: Determination of Development Scenarios of the Educational Web Forum. In: *Proceedings of the XIth International Scientific and Technical Conference (CSIT)*, 73-76. (2016)
 33. Bomba, A., Nazaruk, M., Kunanets, N., Pasichnyk, V.: Modeling the Dynamics of Knowledge Potential of Agents in the Educational Social and Communication Environment. In: *Advances in Intelligent Systems and Computing IV*, Springer Nature Switzerland AG, Springer, Cham, 1080, 17-24. (2020)