The methodical approach to e-portfolio content formation

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Abstract:

The paper develops a methodical approach to e-portfolio content formation. It includes several positions: application e-portfolio for different users' category; substantiation of criteria for e-portfolio formations; design of curriculum and materials structure, which adequate to criteria set; developing complex project for realizing practical competences.

1 General idea of the methodical approach

One of the modern higher school problems is development of the contents, structure and realization of e-portfolio. Many authors have devoted the works to this problem [1-6], however it is still far from the solution.

Authors of this paper offered the methodical approach to e-portfolio contents formation which consists in the following.

1) Assignment and use of the e-portfolio by different users' categories determined.

Usually estimations which accompany with the received diplomas reflect basically of knowledge, but not ways of their transformation through answers in examination. In this case the e-portfolio becomes „visit-card" of the student and the graduate. Such „visit-card" reflects the skills turned out by students.

Through such results, while working with a e-portfolio, the qualified expert can see as far as the received skills in use of the certain tools are necessary for the specialist of the given structure. And on the other hand – it is possible to see as concrete realizations of components of a e-portfolio are made and to evaluate specialist's level, the competence which he can develop during real activity.

Interesting e-portfolio quality for employer's evaluation is the opportunity of fast intuitive estimation all possible expectation connected with specialist.

There is a necessity for criteria formation which should satisfy e-portfolio: on the side of the student - for activization of educational process; on the side of the employer - for the help in search of the workplace allowing as much as possible to realize potential of the person, reducing risk of discrepancy of knowledge, skills to requirements of a concrete workplace.

2) Formation of the criteria set is made.

It is necessary to generate determined criteria basis through which it is possible to construct techniques of the e-portfolio formation, supporting these criteria.

First group of criteria reflecting creativity of the student: elements of the e-portfolio should reflect the certain level of creativity, width of a cognitive outlook, ability to integrate various components of knowledge at the decision of applied problems.

Other group of criteria is directed on the persons himself to show development of their abilities during training. The e-portfolio had to give them the sens of closeness to a reality of

created products in practical activities. The e-portfolio itself should carry in a motivational component to development of the students.
The third group of criteria concerns the teacher – reception of the feedback for the quality of educational process improvement: the e-portfolio should show strong and weak places in educational process, the contents of rates and specialities as a whole.
3) Design of the curriculum structure for performance by students of the works adequate to conditions in points 1 and 2.
4) Development of requirements to individual educational research works at the separate disciplines studied within academic year.
In every speciality curriculum structure in each educational year it is allocated tasks for individual works and the task for a complex academic year project is given.
5) Formation of structure and requirements to performance of the complex academic year project connecting separate rates and individual educational-research works.
6) Performance by students of a complex academic year project and its inclusion in structure of the e-portfolio;
6) Collective discussion of results in student's group.
The competitive component means, that when the students can compare their results with colleagues, it stimulates students to development. For this purpose the feedback mechanism should be constructed on the basis of collective discussion of the results, stimulating use before the received knowledge, skills for the decision of the current problems.

2 Some important points of the methodical approach operationalisation

In Ukrainian universities formation of a speciality is based on preliminary development of two base documents: the educational qualifying characteristic (EQC) and the educational professional program (EPP). These documents describe the competence and connect separate fragments of the future expert's knowledge and skills with modules of disciplines. EQC and EPP are made out as standards of educational process. These documents are closely connected with qualifying directories which reflect a circle of duties and skills of the expert in the given workplace. On the basis of the given documents the maintenance of working programs of separate rates in which communication of knowledge and skills with concrete themes developed in each disciplines.
Nowadays preparation of engineering specialities experts can be focused on wide enough range, concrete workplaces. For example, the developer of multimedia electronic editions should be able to perform works of the broad audience of narrow experts (or at least to understand the maintenance and specificity of these works): the executive producer, the creative head, the designer of dialogue procedures, the designer of user's help tools, the industrial designer, the manager of the project, the editor, the expert under the maintenance of the project, the researcher, the art director, the designer schedules, the engineer on work with a sound, the photographer, the network manager, the programmer. At the same time separately taken expert can have the more developed competence of one or two directions of complex activity.
Process of criteria evaluation is based on movement from modules of disciplines through the competence to an end-product which the expert should create. And the choice of the product most essential components is carried out on the basis of experience of teachers and consulting with experts - workers of the enterprises. Thus it is necessary to notice, that such sets for the same specialities can be differ in different educational institutions reflecting a scientific and pedagogical orientation of the university.

Example. On the basis of the analysis of an end-product which the expert should be able to create, criteria of an of group competence for future expert from the employer are generated: in use of materials of drawings AutoCAD in 3DSMax environment; animations of assembly process and works of the device; use of various formats of data. On this basis the purposes of the project section performance are generated: to receive practical skills of import and use of materials of drawings AutoCAD in 3DSMax environment; to learn how to create animation of assembly process and works of the device; to learn how to import the received results in formats, suitable for use in multimedia presentations.
For performance of the given section it is necessary for student to know: kinds of projections in 3DSMax; the basic objects 3DSMax, their purpose; concept of three-dimensional object; concept of visualization of a stage; rendering. These elements of knowledge form criteria for the teacher which allow to receive a feedback for improvement of quality of educational process: to show its strong and weak places.
Choice of subjects which join in structure complex project based on an estimation of the importance corresponding of competence in expert's activity for creation of an activity's end-product. Thus, the methodical approach is realized as a result of creative movement of a teachers' command on chains: end-products of the expert's activity - competences - knowledge and skills -modules of subject matters - subject matters - criteria of an competences'' estimation - the individual task on discipline - the purposes of project - the complex project - e-portfolio.
For realization of the complex project the virtual command is formed. It consists from the student and several teachers who advised on separate sections of the complex project.

3 Realization of the methodical approach

There are certain experience of e-portfolio realization and formation which in the certain measure answers the criteria generated above in Kharkiv National University of Economics (Ukraine).
For the engineering speciality «Multimedia technologies of electronic editions» students within one academic year (2 semesters) carry out a complete complex academic year project which separate parts are connected in complete structure. On the other hand – they are independent individual learning-research works at the concrete disciplines studied within this academic year (usually such rates 4-6)
The academic year project forms a e-portfolio on the basis of ordering, and fastenings of the knowledge received by the student at studying of 6 disciplines «Engineering and computer the schedule», «Theoretical mechanics», «Technical mechanics», «Bases of design and a composition», «Technology of computer design», «Objective guided programming», and also developments of practical skills using knowledge trough development of the mechanical device model by means computer schedules. Result of an academic year project is the multimedia presentation.
Let's consider some elements of structure of the complex project and the didactic purposes connected to them. Section "Modelling of the mechanical device in dynamics with use of tool means of three-dimensional modelling 3DS Max". The purposes of performance of the given unit: to receive practical skills of drawings AutoCAD in 3DSMax environment import and use; to learn how to create animation of assembly and work of the device process; to learn how to import the received results in formats suitable for use in multimedia presentations. Section "Modelling of the mechanical device in dynamics with use for means of interactive animation Macromedia Flash". The purposes of performance of the given unit: to learn how to create animation of the working device in Macromedia Flash environment and to import multimedia objects to an animation clip.

Section “Development of design of multimedia presentation”. The purposes of performance of the given unit: to formulate and solve problems of a graphic composition creation; to learn how to carry out design of the advertising image of the mechanical device in conformity with the individual task; to receive skills of a composition and style directions of graphic design laws use.
The structure of the e-portfolio includes multimedia presentation which purpose is a demonstration designing results. The basic functions of multimedia presentation are: presentation of the information about task of a complex academic year project, information about student developed of the project and his advisers; demonstration of animation clips which illustrate work of the mechanical device (designed with use of Macromedia Flash and 3DSMax): demonstration of a clip which simulates process of assembly of the device (created with use of AutoCAD program). The student's portfolio should demonstrate a sufficient mastery of the knowledge and skills of design, interactive media, and/or three-dimensional digital graphics.
For the speciality "Management business administration" students also carry out a complex academic year project which components are preliminary developed during performance of individual tasks on 4 disciplines. The first section of the project is devoted to the analysis of enterprise’s activity, the second – the SWOT-analysis and formation of development of the enterprise strategy. In the third section on the basis of the chosen strategy the program of the enterprise development is formed, in the fourth – the choice of tools for development, in the fifth – a variant of enterprise’s business - processes reengineering is proved.
All portfolios must be delivered in a digital format such as DVD, CD-ROM, or Web site. In the report separate positions of the approach and examples of its realization at the Kharkiv National University of Economics are in details considered.

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