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Embedded into LMS Engaging Collaborative ePortfolio System

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1. Considerations

Could you imagine how many e-learners fail and dropout? According to Forrester report about 75 per cent learners do not finish their e-learning courses [1]. Obstacles for such high dropout rate may vary. E-course developers ought to take a note of students' behaviour forms within e-learning environment, as well consider most suitable and probably new ways to enhance learning [2]. To avoid such high dropout rate education professionals are seeking for additional appropriate motivating tools and systems which can engage learners into competence acquiring process in the most suitable and effective way.

Several studies highlight three main provisions, i.e. learners active involvement into learning process, real-life context ties to learning assignments, as well critical thinking and reflection, have to come into force to make learning effective [3]; [4]. The first condition defines tutor's efforts to make learning more motivating and attracting. Good results are achieved by „involving students in doing things and thinking about what they are doing” [5]. The second and third terms stand for the usage of scenarios in educational process which are based on real-life situations. Learners can better understand such assignments and achieve better results [6]. Real-life situations, in their turn, accelerate critical thinking abilities [7]. Scenarios built on real-life simulations engage students into competence acquisition process, direct them to go into details, analyze the problem and find appropriate solution [8].

Teaching support during whole learning course and other students' constructive feedback may facilitate learning progression and competence development. We ought to consider also group-working factor's importance and positive impact on learners' reflection and critical thinking expressions. Enrichment of existing ePortfolio systems with appropriate engaging tools might improve learners' critical thinking abilities, enhance their competence development and learning outcomes.

2. ePortfolio system design and implementation

2.1. System Design

To facilitate and enhance competence development an experimental ePortfolio algorithmic model was created. This model along with external study portal information system (IS) 'ORTUS' has ensured students' competence development assessment process along the study course [9].

Experimental ePortfolio system's algorithmic model in simplified view is shown at Figure 1. An extra external assessment processes (the right side of the Fig. 1) are added to this figure just to emphasize the importance of a likely full spectrum of assessment types which may vary in different learning environments and which have crucial significance in competence development.

Students can upload the accomplished homework onto Riga Technical University's educational portal 'ORTUS'. Then with an ePortfolio system administrator's assistance, the course tutor sends these works to the ePortfolio system. ePortfolio groups are formed based on a sequence of submitted homework.

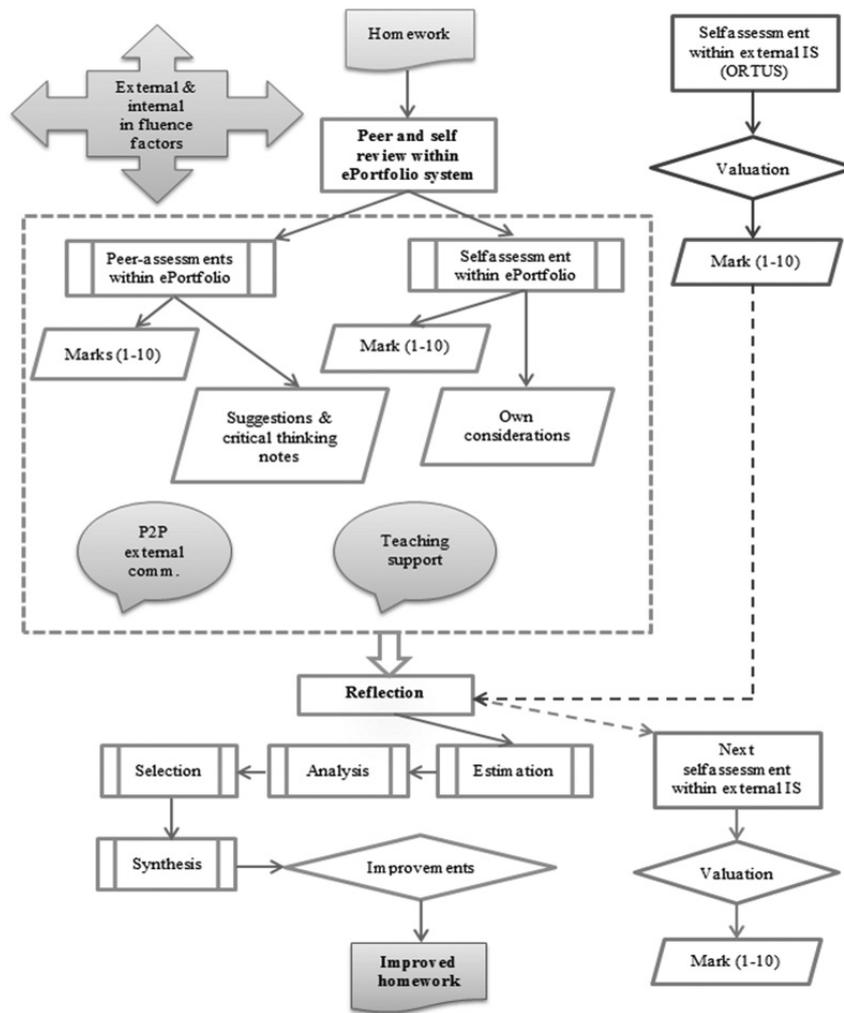


Fig. 1. Simplified scheme of the experimental ePortfolio system's algorithmic model.

Students should assess their group members' accomplishments and make self-assessment. They have a possibility to see group member names against their achieved assessment results: marks, critical thinking notes and constructive suggestions. Based on this feedback learners can improve their previous homework.

2.2. System development

An access to ePortfolio groups and assessment tasks is available both from BPOM course page in the university's study portal 'ORTUS' Moodle environment (Fig. 2) and independently by filling in ePortfolio URL (<http://85.254.226.33/ePortfolio/>) in a Web browser's toolbar (Fig. 3).



Fig. 2. The link to the ePortfolio and instructions file.

In both cases an activation of actions starts from an authentication and authorization. In the users profile they are asked to enter their login identification and password (Fig. 3). For this purpose authentication and authorization part of the MySQL data base is exploited, and an authority is assigned to the user accordingly users' group.

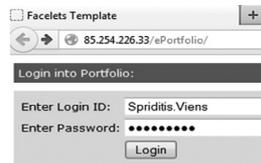


Fig. 3. ePortfolio login page.

After login ePortfolio user's main page with personal desktop opens (Fig. 4). It contains a set of homework and assessments with feedback: critical thinking notes and suggestions given to the user by peers – particular group members. Here is also a space where tutors and system administrator can place necessary recommendations.



Fig. 4. User's desktop.

By clicking on appropriate homework task (for instance, in Fig. 4 – links: „1. mājas darbs”, „2. mājas darbs”, etc.), user's workpage opens (Fig. 5). Here the student can download and save three

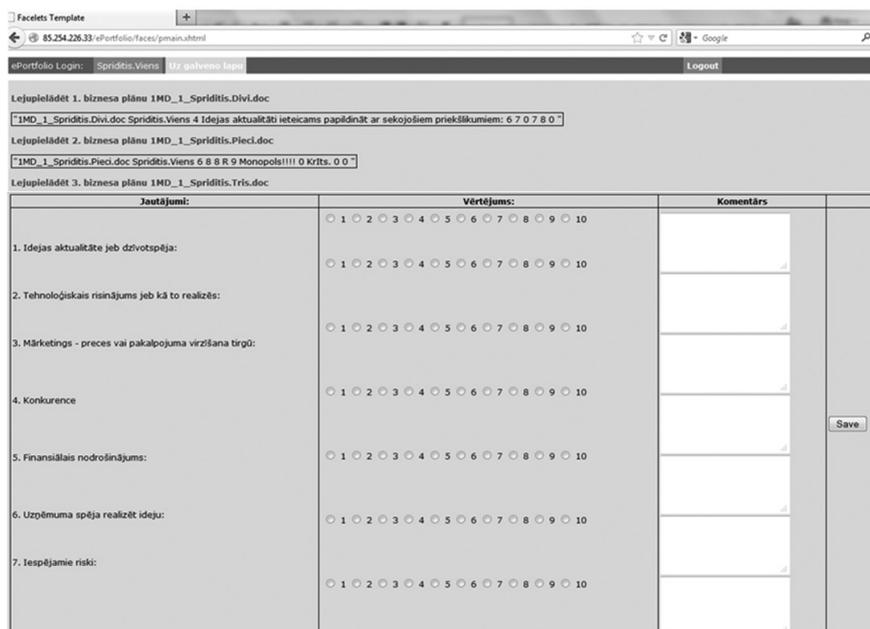


Fig. 5. Students work assessments page.

his/her group member homework, read them, assess, mark corresponding competence level, and write improvement suggestions and critical thinking notes to assist others in further improvement of their works. After completion of group members assessment (classing by scores, filling-in assessment forms, and saving), filling fields are not shown anymore. There is an obligation to assess not only group members, but also to make self-assessment: assess own level of competences and describe personal considerations regarding achieved results.

By clicking on appropriate peer assessment link (for example, in Fig. 4 – alternate links: „1. majas darbs – citu kolegu vertejumi”, etc.), peer assessment and feedback summary in user’s page opens (Fig. 6). Here are not only group members’ remarks, but also user’s self-assessment scores and notes about own work progress.

Biznesa idejas autors:	Biznesa idejas vērtētājs:	Jautājums:	Jautājuma vērtējums:	Jautājuma komentārs:
3MD_99_Spridits.Viens.xls	Spridits.Viens	1. Idejas aktualitāte jeb dzīvotspēja:	0	- It kā finanšu tabulā šis jautājums nevarētu atainoties.
3MD_99_Spridits.Viens.xls	Spridits.Viens	2. Tehnoloģiskais risinājums jeb kā to realizēs:	10	Pilnīgi nevar teikt, ka šis kritērijs būtu atbilstošs, bet tomēr ... uzskatu, ka man izdevies diezgan pilnīgi to atainot.
3MD_99_Spridits.Viens.xls	Spridits.Viens	3. Mārketinga - preces vai pakalpojuma virzīšana tirgū:	7	Pagaidām vēl ir šaubas, vai izdosies panākt vienošanos ar reģionālajiem izplatītājiem par manas preces tālāku virzīšanu. Bet to es centīšos noskaidrot tuvāko nodarību laikā.
3MD_99_Spridits.Viens.xls	Spridits.Viens	4. Konkurēnce	7	Pietūkšit pagaidām pilnas atbildes par visiem konkurentiem. Tāpēc arī šo finanšu tabulu pilnveidošu vēlāk. Varbūt kaut ko ieteiks mani grupas biedri. Loh ceru :)
3MD_99_Spridits.Viens.xls	Spridits.Viens	5. Finanšialais nodrošinājums:	9	Tabulu sastādīju, cerams, pareizi. Un to papildināšu, kad būs zināmi grupas biedru komentāri.
3MD_99_Spridits.Viens.xls	Spridits.Viens	6. Uzņēmuma spēja realizēt ideju:	10	Ja ir reāli cipi, tad arī rālis rezultāts.
3MD_99_Spridits.Viens.xls	Spridits.Viens	7. Iespējamie riski:	7	Nepieciešams grupas biedru atbalsts ieteikumos.
3MD_99_Spridits.Viens.xls	Spridits.Divi	1. Idejas aktualitāte jeb dzīvotspēja:	0	-
3MD_99_Spridits.Viens.xls	Spridits.Divi	2. Tehnoloģiskais risinājums jeb kā to realizēs:	0	-
3MD_99_Spridits.Viens.xls	Spridits.Divi	3. Mārketinga - preces vai pakalpojuma virzīšana tirgū:	10	OK
3MD_99_Spridits.Viens.xls	Spridits.Divi	4. Konkurēnce	0	-
3MD_99_Spridits.Viens.xls	Spridits.Divi	5. Finanšialais nodrošinājums:	10	Normāli
3MD_99_Spridits.Viens.xls	Spridits.Divi	6. Uzņēmuma spēja realizēt ideju:	10	Derēs
3MD_99_Spridits.Viens.xls	Spridits.Divi	7. Iespējamie riski:	0	-
3MD_99_Spridits.Viens.xls	Spridits.Pieci	1. Idejas aktualitāte jeb dzīvotspēja:	0	-
3MD_99_Spridits.Viens.xls	Spridits.Pieci	2. Tehnoloģiskais risinājums jeb kā to realizēs:	0	-
3MD_99_Spridits.Viens.xls	Spridits.Pieci	3. Mārketinga - preces vai pakalpojuma virzīšana tirgū:	7	Ar ieteikumiem to varētu labi sasaitēt, bet vajadzēs pievērst uzmanību arī izdevumiem turpmākajā darbā.
3MD_99_Spridits.Viens.xls	Spridits.Pieci	4. Konkurēnce	3	Biznesa idejā tu esi norādījis par konkureses faktoriem, taču kad sāki aizpildīt finanšu tabulas ieteikumu sadaļu, piemērsi, ka konkurence būtiski var ietekmēt tavus ieteikumus.
3MD_99_Spridits.Viens.xls	Spridits.Pieci	5. Finanšialais nodrošinājums:	8	Skatīšajās ziņā viss precīzi, taču jāņem vērā konkureses ietekme.
3MD_99_Spridits.Viens.xls	Spridits.Pieci	6. Uzņēmuma spēja realizēt ideju:	10	Jā, tas ir redzams.
3MD_99_Spridits.Viens.xls	Spridits.Pieci	7. Iespējamie riski:	2	Dienēžē, riski nav īsti oemti vērā, bet tie var samazināt ieteikumus.

Fig. 6. An overview of made assessments within ePortfolio group.

2.3. Results

From 203 really joined the course students only 173 learners finished the course. Dropout reasons vary but none of them are caused by course issues. 56 learners took part in all group-working activities within ePortfolio system, i.e. all five times; 16 students also were very active – they participated in four group-working activities; 19 students were rather moderate – three group-working activities; 27 students were less active – two activities; 39 students were inactive – only one group-work was done; and 97 did not participated in any of ePortfolio group-working activities. As the taking part in ePortfolio activities for students was not compulsory, shown numbers of participation activities is rather high.

Experimental ePortfolio prototype testing results displays (Fig. 7 and 8) that activities within ePortfolio system have direct correlations with students’ exam results and increased level of their competencies. Similarly, the number of improved homework also has direct correlation with activities within ePortfolio system, i.e. the number of ePortfolio login files. More active students much more take part in offered group work activities. It is clear that learners’ reflection on critical thinking notes and constructive suggestions leads to a creativity, synthesis and competence development. As a result, the number of corrected, slightly improved or crucially processed works depends on users’ activity level within ePortfolio system. All in all there were received 312 improved works. From them the second homework was improved 78 times, the third homework was improved 66 times, the fourth homework was improved 65 times; and the fifth homework was improved 103 times.

There a question rises whether inactive students did gain benefits from ePortfolio system even if they did not participated in any of the system’s group-working activities? The right column in the second set of columns from the right in Figure 8 shows that there are several students who irrespective of collaborative activities’ disdain have improved their homework. It was possible due to critical thinking notes which were put by ePortfolio group members in corresponding group activity, as well those

inactive students' interest in processes within ePortfolios – the last column of the Figure 8 displays „Login files (average)”.

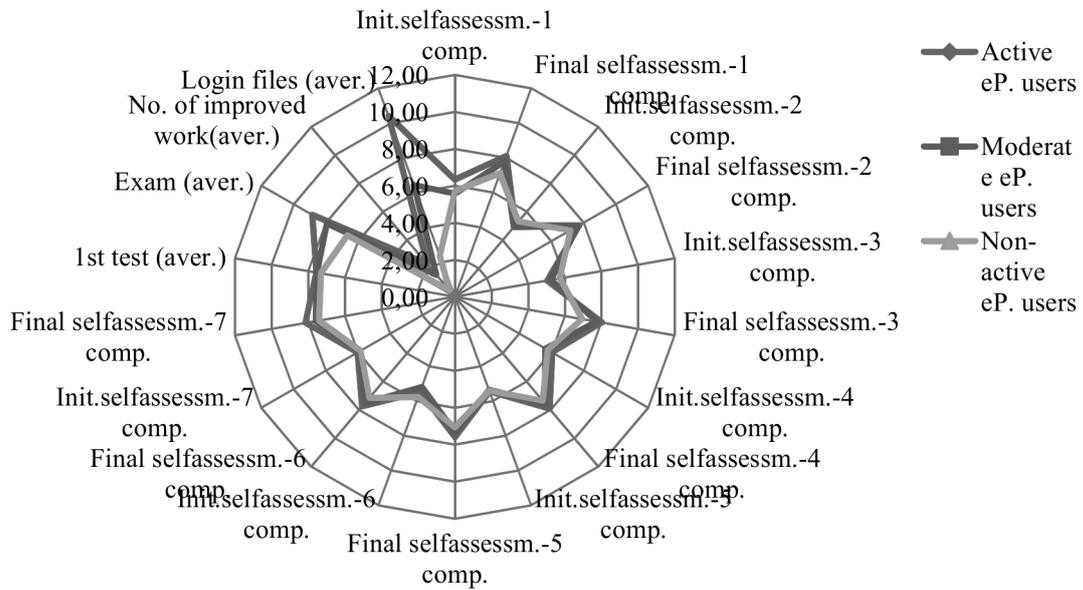


Fig. 7. BPOM 7 competences' development correlations with ePortfolio activities – 1.

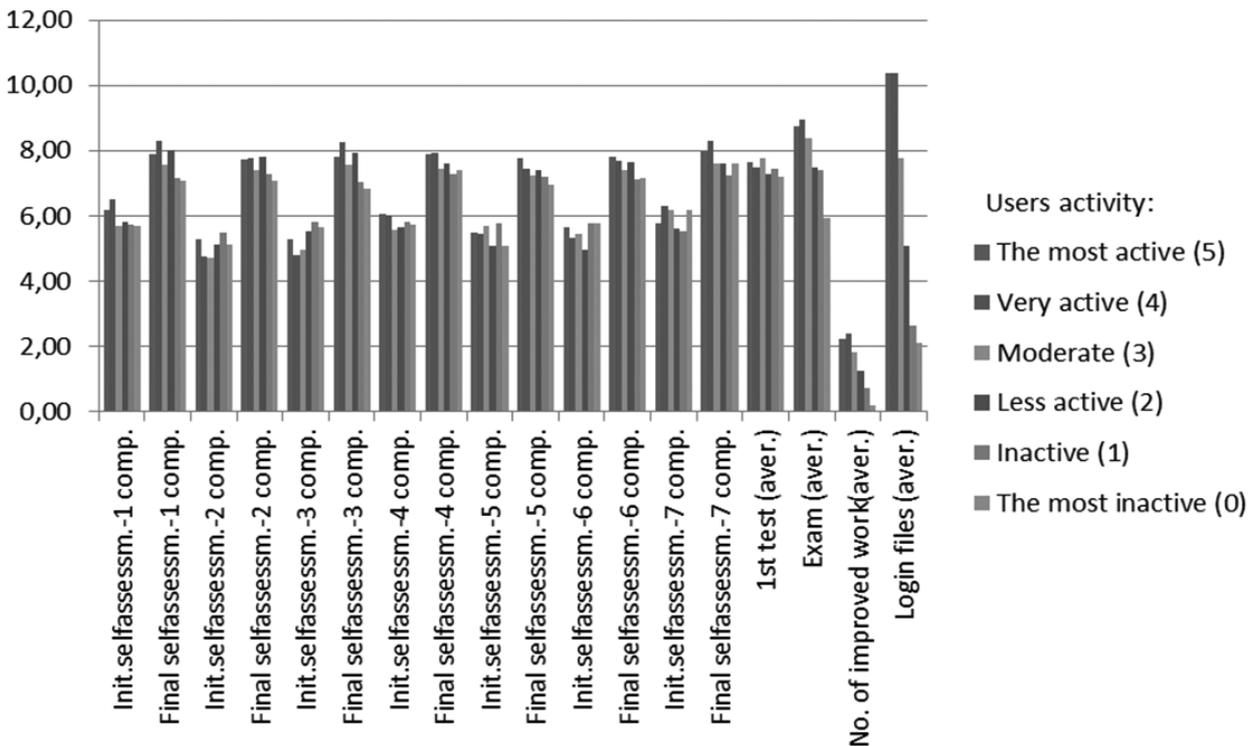


Fig. 8. BPOM 7 competences' development correlations with ePortfolio activities - 2.

Conclusions

Analysing students competence development issues related to initial self-appraisals, apart from activities within ePortfolios, we have found that there are no correlations between their self-assessments and real competence developments [10].

Though, analysing students activities within ePortfolio system, it was concluded that there is the correlation between students' activities in ePortfolio system, on one hand, and their test marks, exam results, and achieved competencies, on the other hand. Activities in ePortfolio system facilitate improvement of competence levels. New system encourages students to think critically. Introduced ePortfolio system has a great positive impact on the learners' competence development. Experimental ePortfolio system:

- Ensures collaboration activities within and outside ePortfolio groups,
- Enhances responsibility for own actions and team work results,
- Motivates learners to think critically and reflect on things and on-going processes.

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