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«ҚҰЗЫРЕТТІЛІККЕ БАҒЫТАЛҒАН ТӘСІЛ АЯСЫНДА БІЛІМ БЕРУ БАҒДАРЛАМАСЫ ЖӘНЕ ОҚУ ПӘНДЕРІ БОЙЫНША КҮТІЛЕТІН ОҚУ НӘТИЖЕЛЕРІН БАҒАЛАУ» атты 51-ші ғылыми-әдістемелік конференциясының МАТЕРИАЛДАРЫ

2021 жылдың 17-19 наурызы

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«ОЦЕНКА ОЖИДАЕМЫХ РЕЗУЛЬТАТОВ ОБУЧЕНИЯ ПО ОБРАЗОВАТЕЛЬНЫМ ПРОГРАММАМ И УЧЕБНЫМ ДИСЦИПЛИНАМ В КОНТЕКСТЕ КОМПЕТЕНТНОСТНО-ОРИЕНТИРОВАННОГО ПОДХОДА»

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Преподавание дисциплины на 3 языках также создает свои трудности. Необходимо тщательно следить за качеством переводов. Для каждого языка перевод стоит максимально приближать к тому, что студенты читают в книгах и статьях. Несоответствие переводов приводит к тому, что одни студенты, видя знакомые формулировки, легче распознают суть вопроса, а другие студенты, видя незнакомые слова и непривычные формулировки делают ошибки из-за непонимания вопроса или просто потому, что не успевают понять вопрос и выбирают ответ наугад, стараясь успевать по времени.

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FORMATIVE PEER ASSESSMENT AS A LEARNING METHOD: METHODOLOGICAL CONSIDERATIONS FOR ASSESSMENT PURPOSES AND INVOLVEMENT OF LEARNERS

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Abstract. The article develops a perspective on peer assessment as a learning method. Authors present an analytical model for identifying motivational and knowledge-enhancement potential of peer assessment tasks to a learner's involvement. Findings from the conduct of peer assessment exercise in a sample of 91 undergraduate students support multidimensional effect of peer assessment tasks to a learner’s self-directedness and self-assessment toward achievement of learning outcomes. Role of teachers as facilitators of student learning through peer assessment is discussed, followed by suggested areas for further research.

Keywords: peer assessment, formative assessment, involvement of learners, learning outcomes.

Introduction. Peer assessment activities are not entirely new instruments of instruction and learning. However, the links between forms of peer assessment and configurations of the learning process continue to be of ample interest to researchers and practitioners [1, 2]. The existing literature applies contested conceptualization of peer assessment. This article adopts the definition of peer assessment as an activity when students deliver some form of assessment to each other’s learning accomplishment. This work places peer assessment within the ‘assessment as learning’ paradigm [3, 4]. This paradigm examines how assessment facilitates student engagement in relation to intended learning outcomes. In line with the paradigm, this paper underscores the potential of peer assessments to position a learner as an engaged and reflective co-constructor of the learning process. The main objective of the work is to explore some methodological considerations about peer assessment as a learning method and implications of such for learners’ involvement.

Purpose of assessment. The reviewed literature differentiates two functions that assessment performs in pedagogical realm. In the first, assessment is seen as a tool to facilitate learning, including collaborative learning [5]. These peer assessment tasks have a more explicit focus on engaging and motivational components. At the same time, assessment is a recognizable tool to guide student learning toward achievable and measurable learning outcomes [6]. Two functions do not conflict but complement each other, leading to a range of assessment forms and purposes.

The methodological literature identifies diagnostic, formative and evaluation purposes of assessment. The distinction is very subtle and all purposes are intertwined to form a process that helps a learner internalize their knowledge in an effective way [7]: Diagnostic assessment identifies each student's knowledge bases and inventory of skills in relation to intended learning outcomes [8]. Evaluative assessment (summative) is usually carried out for the purpose of grading and assigning a formal mark.

The focus of this study is formative assessment due to its inextricable linkage to didactics of a learning process per se [9, 10]. This assessment contains instructional design elements that allow students to receive ongoing feedback on their learning with the purpose of (re)configuring their own learning strategies.

Peer assessment forms. The formative peer assessments constitute multiple learning activities – they can be done by peer to peer, individual to group of peers, or collaboratively by multiple groups. Besides, peer assessment contains a self-assessment component: a reply to a peer feedback or writing a reflective essay. Dilogical forms between assessed and assessors are also commonly applied: such as for example, debates, student-lead structured discussions, etc. Table 1 presents examples of peer assessment instructional forms compatible with formative assessment purpose.

Table 1 – Examples of peer assessment instruction designs by assessment purposes

Purpose of assessment	Examples of peer-to-peer form	Examples of individual-peer group form	Examples of peer group-to-peer group	Examples of self-assessment
Formative	Peer to peer marking of a written or oral work; Exchanging feedback in pairs	One student designs a task for a group and moderates group's solution toward correct answer	Each group is asked to develop jointly a solution to complex tasks; Each group is a part of learning game/simulation where progression to each next step depends on performance in a preceding one	Reflective essay, followed by its discussion with peers / teacher; Taking part in learning game / simulation where progression to each next step depends on performance in a preceding one

Learner's and teacher's role in formative peer assessments. Peer assessment as compared to instructor-lead assessment manifests some important differences in a learner's role in learning process. Peer-assessments imply greater extent of a student's participation in construction of learning process [12]. Malan and Stegmann [13] observed positive effects of peer-assessments to students' self-defined responsibility for their own learning. The

reviewed literature provides research evidence that peer assessment entails a complex learners' behavior: At the diagnosis stage, learners develop self-consciousness about areas of knowledge they are not aware of [12, 14]. For a learner, formative and evaluative peer-assessment tasks present peers additional sources of evaluation, trustworthiness of whose judgement has to be analyzed and critically appraised. Formative assessment is well compatible with gamified instructional designs and can be designed as a series of related tasks.

Table 2 – Learner's and teacher's roles by peer assessment purposes

Task example	'Identify correct and incorrect answers. For each incorrect answer write a short recommendation on how to develop a solution. If all answers are correct provide a 5-7 sentence feedback about particularly strong points in a peer's answer'
Learner's involvement	Students critically analyze organization of a peer argument / solution of a mathematical problem. A student formulates correct solutions resulting in reinforcement, evaluating and/or reconfiguring their own knowledge.
Instructional design	Teacher may scan works in advance and distribute works to students in order to ensure each student has a peer's work suitable for assessment. Teacher may prepare a list of correct answers as student peer-assessment aid

Table 2 illustrates an active role of a learner and facilitating role of a teacher during conducting peer assessment tasks. The social and natural science paradigms may have different assumptions about the nature of knowledge and its methods. Nonetheless, literature is in consensus that peer assessments tasks have engaging effects and also induce students in all disciplines to practice learning skills [12, 16]

Besides that, formative assessment intensifies a learner's involvement in knowledge acquisition [15]. In an evaluation performed by an instructor a learner is a recipient of an evaluation with possibility to reflect on it. In an evaluation performed for a peer or for oneself learners have to recollect on and formulate their own conceptual inventory in regard to a peer answer, thus be actively involved in knowledge generation [16].

Empirical evidence. We conducted formative peer assessment tasks in 6 groups of students varying from 12 to 30 students. The study had exploratory purpose and aimed at initial study of peer assessment potential for learner involvement as perceived by students themselves. Sampling was a purposive convenience type and involved 91 students, of whom 60.4% were at their second year of study, 37.4% at third and a small group of fourth-year students – 2.2%.

Each group received a discipline-related learning exercise followed by a peer assessment task of formative purpose. Students performed peer assessment individually and in groups after which expressed their perception on motivational and learning aspects of the peer assessment exercise and its effectiveness. The analytical model (figure 1) for exploration of a learner involvement consisted of questions to evaluate: motivational aspects such as increased interest to learning process due to novelty/unconventionality (MN), due to self-directedness and self-reflective effects (MS), and due to sense of responsibility for evaluation of a peer performance (MP). The questions identifying aspects of learning effectiveness aimed to analyze student perceptions on increased knowledge of course-related concepts (LK), increased confidence in applying concepts for problem-solving (LA), self-awareness about self-standing (strengths and gaps) in relation to intended learning outcomes – (LSA), and identifying own approach for learning (LL). We introduced two

control factors: understanding of task given for assessment (C1) and student recollection of difference between peer assessment and expert (teacher) assessment (C2).

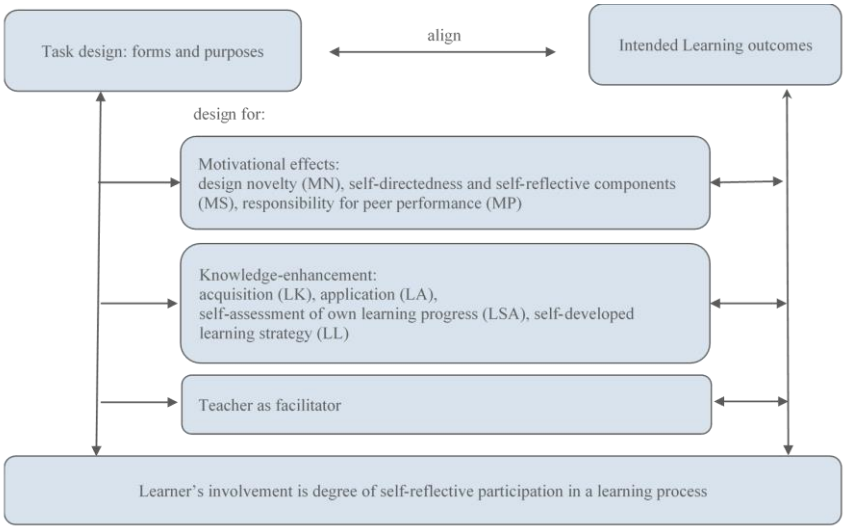

Figure 1. Analytical model of a learner's involvement

Results. Students appreciated motivational and knowledge-enhancement components (Figure 2). From motivational perspective, the majority of students fully agree that novelty and non-rouiness (68,9%), self-directedness and self-reflection (65,6%) and responsibility for peer scores (67,8%) are factors perceived as engaging. Students perceived effects on team dynamics by accentuating the sense of responsibility and fairness when assessing peers. Some students mentioned collaborative effects, as for instance: 'I liked this methodology. It stimulates interaction with peers and makes me more responsible'. In regard to intended learning outcomes, overall, 75,6% of students fully agreed that peer assessment exercise positively affected their learning outcomes. It appeared that students most appreciated the potential of peer assessments to develop their own learning strategy (72,2% fully agree) and understand strengths and gaps in course-related knowledge (70% fully agree), followed by perceived confidence in applying concepts (fully agree 62,2%) and concept acquisition (fully agree 61%). However, statistical analysis will be performed to test significance of relative importance of dimensions. From the initial analysis of survey results, positive perception of students about each dimension of peer assessment is apparent.

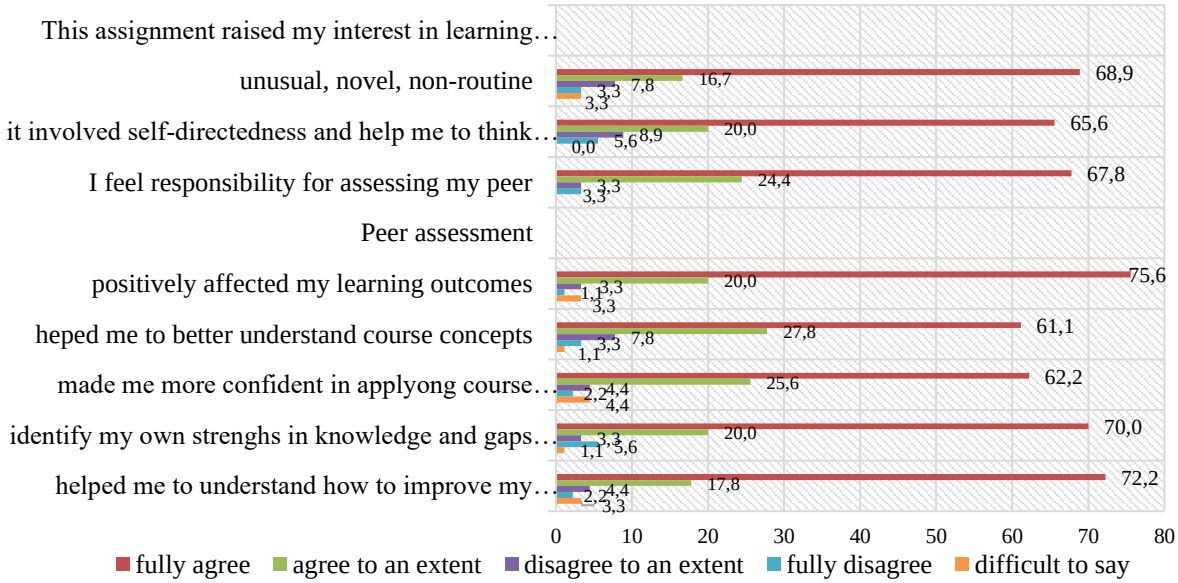

Figure 2 – Peer assessments potential for a learner's involvement

The results draw particular attention to the role of a task design and role of a teacher. Two of motivational effects – self-directedness and self-reflection (MS) and responsibility for peer performance (MP) are incorporated into the notion of peer assessment itself. Teacher can moderate extend of self-directedness by suggesting various forms of assessment guide and criteria. Sense of novelty (MN), however, depends on the instructional design, type of tasks, frequency of delivery in the structure of a course, and student previous exposure to a particular peer assessment task.

The exercises in our study did not offer a list of criteria along which students could assess peers' answers. Some students expressed the need for assessment guides, whereas others appreciated the degree of self-directedness allowable in evaluation. This difference in instructional designs to a learning process and outcomes should be further researched. Peer assessments, apparently, have to be aligned with other instructional elements of a learning process.

For knowledge-enhancement effects, peer-assessments, as our study suggests, require a teacher's role in preparation and facilitation of student peer-assessment activities. It is a misconception that peer-assessment activities can be conducted without instructional guidance [15]. Peer-assessments of complex concepts and complex learning behavior may require preparatory work by a student, while a teacher should choose forms of peer assessment appropriate for shaping student acquisition of knowledge and skills toward intended learning outcomes.

Suggestions for further research. Future trajectory of our study will aim to validate the model by laying statistical data analysis method. The generic Future research should acknowledge that peer assessment may significantly depend on socio-psychological context. Any implementation of peer assessment should account for factors as peer-to-peer trust, trust to an instructor's pedagogy and teaching ethics, students perceptions of psychological safety and self-confidence, among others. The structural characteristics that can affect assessment process and outcomes include, for example, class size, size of teams, degree of team cohesion and online vs offline learning modes. Future research will have to examine peer assessment as exposed to socio-psychological and other contextual influences.

Conclusions. The study concludes that peer assessment can fulfil motivational and knowledge-enhancement learning objectives. Peer assessment tasks can position a student as co-constructor of learning outcomes, however there is no one-fits-all approach to their design and delivery. Teachers assume roles of facilitators of student peer assessments. Design of peer assessment tasks defines the extent to which a peer assessment will serve motivational or knowledge-enhancement learning objectives. Further research will have to attend to exploration of the proposed analytical model with account for socio-psychological and other context-related variables, as well as use of statistical methods for data analysis.

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А.А. ТЕМІРБАЕВА
СТУДЕНТТІҢ ӨЗ БЕТІНШЕ АТҚАРАТЫН ЖҰМЫСЫН ЭЛЕКТРОНДЫҚ РЕСУРСТАРДЫ ПАЙДАЛАНУ АРҚЫЛЫ ҰЙЫМДАСТЫРУ

Әл-Фараби атындағы Қазақ ұлттық университеті, Алматы, Қазақстан

Аңдатпа. Прогрессивті қоғам өндірісті дамытудың жоғары деңгейімен сипатталады, бұл студентерді даярлау мәселелерінде кәсіптік білім беру жүйесіне қойылатын жағдайлардың өзгеруіне әкеледі. Бұл жағдайда әр түрлі өндірістік мәселелерді шеше алатын және өмір бойы өзін-өзі дамытуға және өзін-өзі жүзеге асыруға қабілетті шығармашылық,

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