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Workshopping in Online Courses: Insights for Learning and Assessment in Higher Education

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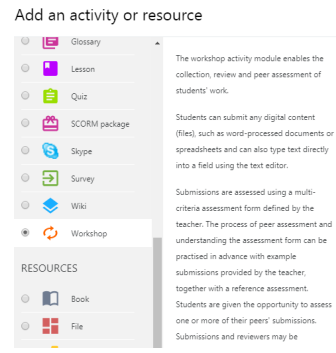
Abstract
Designed to explore effective pedagogical uses of the Workshop *activity tool, which is native to Moodle learning management system, the study reported in this article was an action research. Using the standard steps of planning, intervening, assessing effectiveness, and information sharing, the study sought to identify the best ways to engage students in the process of learning and peer assessment by using Workshop as a learning and assessment tool. After identifying some challenges against students learning during the submission and peer review process, this article highlights some key strengths of the Workshop activity application, based on our study. Then it discusses the application's key affordances for conducting peer and self-assessment, for enhanced engagement in learning, and for the development of higher-order skills such as analysis and evaluation. We conclude by noting that effective use of the tool demands teachers' careful attention to issues such as time provided, peer allocation, and students' skills for effective tool use.*

Keywords: Workshop activity, online learning, action research, peer-assessment, self-assessment.

Introduction

Digital learning platforms and a vast array of tools that they provide have become a normal part of higher education across the world. Even in developing countries like Nepal, as instructors who have been using web-

based delivery of courses for nearly a decade, we have been using different approaches for student assessment, such as uploading a file (e.g., .doc, .docx, .ppt, .pptx, etc.), administering quizzes, assigning written work, using collaborative wiki, giving choices in the Moodle learning management system (for choosing presentation topics as per priority of first come first served), and involving students in forum discussion. Significantly, in spite of the rich array of tools used for diverse types of teaching and learning activities/approaches at Kathmandu University, an institution that is arguably on the leading edge of academic technology in Nepal, until this study was designed and implemented, few interactive learning technologies were used for learning and assessment. We wondered if popular tools do not facilitate effective involvement of students in self- and peer-assessment, reflective writing, and feedback from and interaction with the instructor. Or, is it that instructors do not prioritize interactive modes of learning and teaching so they do not need such technologies? Is it instead that available technologies are not well designed to facilitate interactive learning and teaching? Which of the available tools, especially those integrated within learning management systems or otherwise easily usable, can best facilitate interactive teaching/learning?



Given the above gaps and questions about the availability and effective uses of technology for interactive learning--or, more precisely, the need to develop effective uses of available technology for interactive learning--we selected the Workshop application to address the gap and need. As a native tool for learning and assessment integrated within Moodle, a learning management system (LMS), Workshop allows course facilitators to design and implement interactive learning assignments, such as reading discussions, reflection on term papers, and various forms of reflective writing in formative assessment[9]; it provides a number of affordances for developing interactive learning, reflection, and higher-order thinking in learners. As we explored the pedagogical and educational potentials of the interactive tool that we selected, we designed this study to explore its effective use for instructor-, self-, and peer- centered assessment and for reflective learning among students at our institution. The study also sought to understand how to improve for instructor-, self-, and peer- centered assessment and for reflective learning among students at our institution. The study also sought to understand how to improve the quality of feedback before publishing final

[9] Formative assessment is the key to a quality pedagogical process (David & Debra, 2016). Such assessments help students identify with how well they have learned a topic, what their strengths are, and what they can improve on.

grades assessed by peers by assigning grades on the basis of the quality of students' work and the thoughtfulness of peers' feedback. The purpose of this study was to promote the use of online assessment tools--for which we selected Workshop Activity--for learning through peer review in online, distance, and face to face modes of learning and assessment.

To explore the potentials and uses of the interactive learning/teaching tool systematically, the following research questions were asked: What are the challenges of using Workshop as an assessment tool for teachers and their students in the e-learning platform? What potentials of a tool like this could teachers explore most easily? How could they use such tools to enhance interactive learning, peer assessment, and reflection on learning? Our key findings show that self- and peer-assessment activities provided in Workshop Activity tool facilitates significantly and enhances students' evaluation of their own and peer activities based on the set of criteria (rubrics) provided by the course facilitator(s). Findings also shows that students engage in their own knowledge, learner accountability, meta-cognitive skills and a dialogical, shared model of teaching and learning. In other words, this is an influential way to increase students' awareness of their active role in the learning process. As Boud (1995) stated, the peer-assessment that we did created two main benefits: a) making decisions about the standards of performance expected, and b) making judgments about the quality of the performance in relation to these standards. The other side of this coin is, which is self-assessment, also helped to greatly reduce the course facilitator's evaluation effort, as a part of this job is meaningfully handed over to the students themselves. We did find that, as Tousignant and DesMarchais (2002) argued, students' perception of themselves is not as accurate as their actual performance. For reasons like this, we need to find a way to balance this strategy with some other approaches to meet the desired learning. For instance, McMillan and Hearn (2008), suggest correct implementation of student peer- and self- assessment to encourage inherent motivation, internally prohibited effort, a mastery goal direction, and more significant learning through higher-order thinking. The authors point out a schematic to explain the meaning of peer- and self-assessment, where three aspects are illustrated: a) self-judgment (Zimmerman, 2002), b) learning targets, and instructional correctives and c) self-monitoring. All these aspects are important engines to improve students' higher-order thinking (Anderson, 2001). Yet, all in all, as we report in this article, Workshop tool as an application facilitating peer, self, and instructional feedback, as well as interactive and reflective learning, exemplifies the benefits of using such tools for teaching/learning in our web-based and web-enhanced era.

Method

This action research took place in the context of the researchers' own teaching practice focusing on course ICT in Mathematics Education for M.

Ed. first semester. Action intervention and its effectiveness were observed throughout the semester. The study was completed after the action research cycle demonstrated in the different phases I-III. Firstly, Phase I, the study focused on identifying the existing problem in answering the outlined research questions. This leads to determine the type of intervention needed. Secondly, in Phase II, we trained the students and course facilitators on the use of the Workshop Activity. Thirdly, in phase III, we analyzed the result through interaction with participants and observed their self-reflection on the online protocol of e-learning site. Further, students involved in the researchers' own courses are key participants of the study. To expand the horizon of study at the institutional level, all the course facilitators and students who were eager to learn and use Workshop into the e-learning system were selected for major action intervention such as training to use the tools and outcome evaluation. As the action intervention took place in the researchers' own context of teaching practice, it involves the participation of colleagues. Table 1 below shows the aspects (rubrics) used in the study.

Table 1
Aspects for peer Assessment on the Essay e-Research Conceptualization

Headings	1 point	2 points
Introduction and Evolution	Minimal idea development	Arguing with citation
Conception and Misconceptions	Minimal idea development	Arguing with citation
Opportunities	Minimal idea development	Arguing with examples
Challenges	Minimal idea development	Arguing with examples
Ways forward	Minimal idea development	Arguing with self-reflection
Total Points	Total Marks =10	

Table 2
Total Number of Students Participated in the Study

Program	Male	Female	Total
Master in Mathematics Education	43	10	53

Data Collection

A variety of data-collecting instruments were used to collect both qualitative and quantitative data to serve the purpose of answering the outlined research questions (can be seen in appendix section). To find the answer to the research questions, a survey, telephone calls, and informal discussion sessions were conducted. In the process, an orientation was also given to course facilitators to set up the tool and use the tools in their online, distance and face to face modes of courses. All processes were recorded and reported. However, data collection was not a fixed strategy in this study; we took it as an iterative process of action throughout the problem identification, exploration, and evaluation period of the study.

Findings and Discussion

In this section, findings from each phase of the action research cycle are presented, interpreted, and discussed. Discussion focuses on illuminating various applications of of Workshop in online course platforms and its pedagogical implications for higher education, especially for online, distance, and face to face mode of delivery. In doing so, we focus on interactivity, self- and peer- assessment, and reflective learning.

Opportunities of Workshop Activity

It was very pleasing to know about students' experiences with peer review assignments. However, different informants were heavily loaded by their own conceptualization of the assignment since it was an alluring task for them. In general, we, as researchers, cannot expect exactly similar perceptions among and between different students. As per our planning, we conducted a survey and interview in relation to Workshop. Moreover, all of the students agreed that peer review was a worthwhile activity for learning and peer assessment. Most of the students perceived that the peer review assignment was the best opportunity for them to correct and to be corrected on their own.

In addition, when peer assessment is enabled, the tool allows instructors to allocate students a certain number of submissions from their peers to assess. They obtain a score for all opinions, i.e. aspects, which are added together with the grade for their timely submission. This is used as their final grade (Alexander, Argent, & Spencer, 2017). Thus, the main feature of

the Workshop is to encourage students in assessing the work of their peers and learn from each other to promote collaborative learning. Activities that engage students in learning through self- and peer- review processes allows students to assess strengths of their classmates' submission and have an enhanced understanding of the subject matter presented in the text (Dahal, Luitel & Pant, 2019). In addition, the feedback and suggestions they get from their peers provide them additional and often comprehensive views of their personal effort. The comments from their peers can point out areas for improvement in their work, which may be difficult for students to identify on their own. On the other hand, when the self-assessment is activated in Workshop, a student may be allocated their own work to assess. The grade they receive from the assessment of their own work will be counted into the grade for assessment, which will be added together with the grade for submission and used to calculate their final grade. This activity enables course facilitator(s) to see whether students can find out the strengths and weaknesses of their own work and revisit them impartially.

Further, Self-assessment strategies are students' inward journeys of their activities, whereas peer-assessment strategy forces students to consider not only their own respective activities but also their classmate's activities. By doing self-and peer-assessments, multiple metacognitive skills are worked out by the students that enrich higher-order thinking skills. Hence, peer learning transform learning platforms into places where one can see the birth of critical thinkers, who can evaluate the pros and cons of different ideas or points of view (Spiller, 2009). In answer to this, Wang, Liang, Liu, and Liu (2014) proposed a strategy to arbitrate what they called the non-consensus, i.e., when two or more students do not agree with a reasonable evaluation of a particular activity. Accordingly, Shiba and Sugawara (2014) proposed a trust network model to assess mutual evaluation students within groups, which can be randomly arranged and rearranged during each semester in higher education.

More specifically, our research participants claimed that the whole process of activities facilitated them not just to observe their ways of writing, but also to improve their proficiency in writing by reviewing peers' work. Similarly, some of the students agreed that peer review helped them to develop a culture of sharing ideas for learning in a collaborative format. In the process of peer review, some of them got new ideas, were exposed to new vocabulary and sentence structures, and learned new ideas about comparing and contrasting. In brief, according to the majority of the participants, Workshop in relation to self- and peer- review/assessment provides opportunities for learning by reflecting on self and others' ways of writing and expressing ideas.

Challenges of Workshop Activity

The participants felt that peer review was interesting, as well as challenging. Most of the participants agreed that the process of Workshop was facilitating. However, it was very difficult to justify their level of write up. According to participants, marking/grading information, content-based analysis, time restraints in completing the process, being liberal, lack of understanding of aspects (rubrics as listed in Table 1) were all challenges faced by the students. Grading peers was tough for some of them because they worried that their peers might complain about the mark they receive. On the other side, for a single assignment, they were compelled to put in double effort (Dahal & Dahal, 2015). In most of the traditional assignments, students simply submit their work to the course facilitators, but in this process, it is mandatory to review one or more peers. It demands that they be knowledgeable in all aspects of the assignment and in fare judgment skills too.

Workshop Activity: Students as Reviewer

When course facilitator(s) set up the Workshop Activity in their course block in LMS and moves to the submission phase, students can start submitting their work. If the course facilitator(s) sets up the sample submission, students can review the sample before they submit, helping them to easily navigate the feature when they are ready. A majority of the students submitted two types of files either online text or file attachment. After the submission phase is over, the assessment phase starts which allows students to begin the peer-reviewing. It should be noted that another important phase is to set the aspects (rubrics see in Table 1) for evaluation or conditions, including how students will be providing feedback or justifying the grade that they give to peers. While analyzing, we found, students tried their best to evaluate being strict on provided aspects. Comments and feedback are also significant for some particular cases. However, many students did not address each aspect of the evaluation they were asked to. They simply provided 100% marks, and their comments and feedbacks were so generic, which indicated to the researchers that favoritism may have played a role, instead of giving a rationale for their peers' assessment, they simply awarded 100% marks to their friends. Further, while analyzing scores, comments, and feedback, the students did not care about each aspect set for peer assessment. Each comment and even overall feedback were too generic (can be seen on the snapshot of the written work reviewed by the peer under the heading of Workshop Activity: Students as Reviewer).

E-research Conceptualization

by [redacted]

submitted on Monday, 15 July 20[redacted] 5:33 PM

Assessment

by [redacted]

Grade: 9 of 10

Assessment form

Aspect 1

E-research: Introduction and evolution

Grade for Aspect 1	1 / 2
Comment for Aspect 1	Introduction phase presented nicely but historical background is not presented as expected.

Aspect 2

E:Research: Conceptions and Misconceptions

Grade for Aspect 2	2 / 2
Comment for Aspect 2	Conceptions- elaborated with citation. Misconceptions- can be presented more precisely.

Aspect 3

E:Research: Tools and Opportunities

Grade for Aspect 3	2 / 2
Comment for Aspect 3	Tools and challenges- nicely depicted and presented from reference

Aspect 4

E:Research: Tools and Challenges

Grade for Aspect 4	2 / 2
Comment for Aspect 4	Tools can be more than listed challenges presented elaboratedly

Aspect 5

E:Research: Way forward

Grade for Aspect 5	2 / 2
Comment for Aspect 5	Grounded in present situation and future direction shown precisely.

Overall feedback

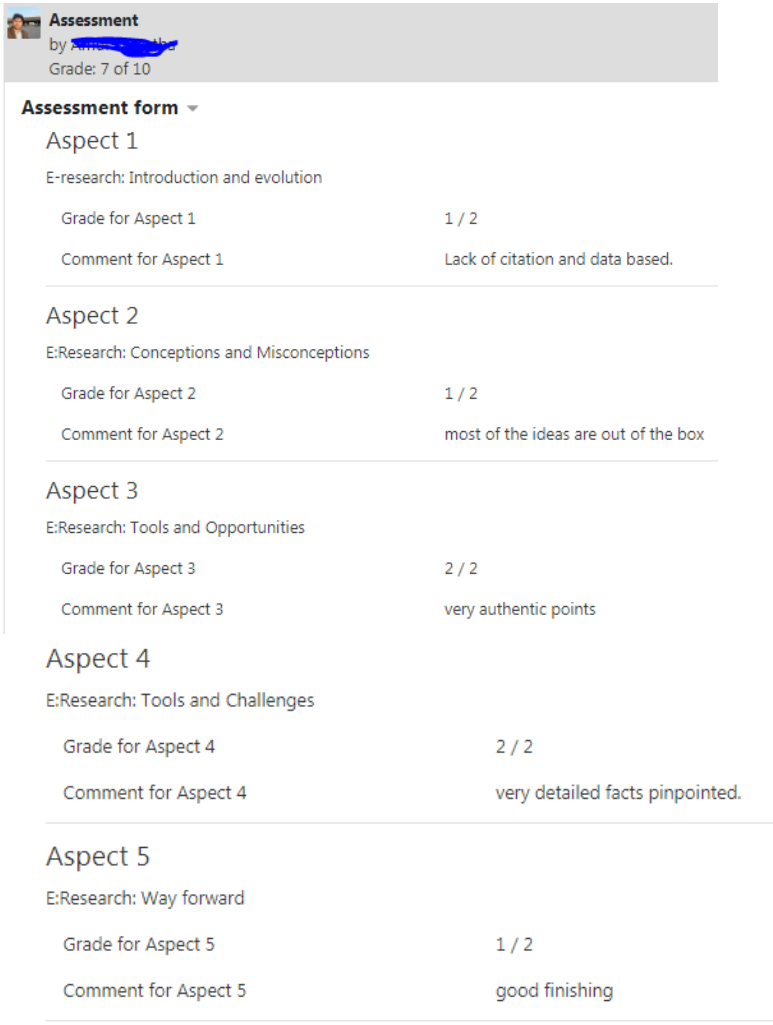
Overall essay on eresearch has been presented very nicely and all the content, ideas and examples are relevant to the topic. Ideas are collected and cited wisely too

suggestion- all the citations should be listed following APA citation format.

E-RESEARCH CONCEPTUALIZATION

by [redacted]

submitted on Monday, 15 July 20[redacted] 11:03 PM



Thus, major attention to be given in this kind of activity would be fairness in marking, commenting, and providing feedback by one student to others whom they evaluated. Avoiding favoritism and biases would be other obstacles to take care of by course facilitator(s). For this, course facilitator(s) can strictly inform students about their grades for assessment (those who do not provide detailed comments/feedback will get a low score for assessment).

Workshop Activity for Course Facilitators

For this study, we found that the course facilitator(s) has a greater role in designing, creating, and implementing the activity. The course

facilitator(s) need to take time to set the activity both conceptually and technologically with possible aspects for evaluation. However, once the activity is set with all necessary components such as instruction for submission, instruction for assessment, guidelines for scores, deadlines for both submission and assessment and sample submission, etc., the role of course facilitator(s) is minimized. However, manual or automatic allocation of submission for peer assessment and switching to different phases of the activity should be carefully executed for the smooth functionality of the activity.

Further, this kind of activity reduces course facilitators' workload of keeping grade records, allocating submissions for peer review, grading, commenting. Likewise, the average calculation of overall grades for both submission and assessment is also automatic. Therefore, a huge manual workload for the course facilitator(s) is minimized by implementing such activity for learning and assessment either for less number of students or a higher number of students at each level.

However, some of the course facilitator(s) did not set the activity because they felt email communication was as easy. Rather, they distributed students' submissions via email to others and collected their review responses. Following are reasons from the study that the course facilitator(s) did not implement Moodle-based Workshop activity:

- Lack of time to learn the new tool;
- Uncertain about how the system works;
- Comfortable with email communication to students.

In addition, another interesting feature is about the ability of the course facilitators to include grades for submission and assessment. If course facilitator(s) wish not to grade they need to accept what peers have graded or they can add their grades to individual students. Finally, to mitigate the tendency of students favoring their peers by giving 100% score while assessing peers, teachers can set anonymity by hiding author's and reviewer's name while doing random allocation for review. When students cannot see the name of the author and reviewer, they feel more comfortable making a fair evaluation - issues on e-Research in relation to online learning culture (Pangeni, 2017). Therefore, teachers need to be sure about all the processes of setting the activity.

Workshop Activity Promotes Cognitivism and Radical Constructivism

Firstly, cognitive theory is aligned with the development of a person's thought processes while reviewing self-and peer-work. It can be broadly defined as the act or process of knowing and acting (Belbase & Sanzenbacher, 2016). As per this theory, learning happens when knowledge in the world of knowledge world is transformed into a learner's mind and is stored. Further, knowledge is gained through experience or modification of pre-existing knowledge to adapt to the changing environment while reviewing peers'

work. In addition to that, this theory focuses on the mind and attempts to show that usually, the information is received, assimilated, stored, recalled and act accordingly (Dahal, 2019). According to cognitivist, learning can be acquired by reviewing peer and self work and then processing and remembering the information. Among various software which can support such learning processes by reviewing peer and self work, Workshop in Moodle is one of them.

Secondly, constructivism motivates learners to share their own ideas, expand their knowledge by utilizing their experiences, think critically on new ideas and experiences, reflect upon changing some of their ideas, and create a meaningful learning environment while reviewing peers' work (Huang, 2002). In a constructivist view of learning, learners construct, reconstruct and deconstruct their own understanding by reviewing peers' work by experiencing things and reflecting on those experiences. Also, constructivist believes that there is always more than ways of writing while reviewing peers' work, and learners try to write from more than one perspective (Ellerton & Clements, 1992). For this, learners must ask questions, explore and assess what they know while reviewing peers' work. Radical constructivism states that knowledge cannot be transmitted from one person to another person but instead, learning occurs by the process of "learning by doing" while reviewing peers' work on the basis of given aspects (as shown in Table 1). Regarding the role of teachers aligned to radical constructivism, it shift from being an evaluator to facilitating the evaluation process by providing learning and assessing environment, so, as learners evaluate peers' work as per the given aspects. Further, learners were free to express their opinion(s) to their peers' works as per given aspects. As a researcher, we allowed learners to evaluate peer work: they were enthusiastic throughout the process started from submission to evaluation. Even more, they were eager to share their evaluations procedural as per given aspects. Sometimes, though they made mistakes while evaluating peer work through the activity, they did not hesitate to come forward with their difficulties. It was good to know that they were learning from their mistakes aligned to given aspects while evaluating peer's work. We tried to make the learners centered approach of evaluation. It could help learners to become active constructor followed by the evaluator of knowledge and not only a passive recipient of knowledge (Dahal, 2019).

Workshop Activity: Reflection of Researchers

In this section, researchers reflect the lessons they learned through this active research process. First of all, it was easy to set the icon and different setting options in the Workshop in LMS. However, after the setting phase was complete, we could not shift to the submission phase. We consulted various tutorials available online, but none of the tutorials were relevant. We were about to give up, after a week-long search and exploration of each of the aspects and underlying tools of activity settings when we discovered the

hindering factor: It was the bulb icon which we initially thought was just an indicator of the phases. However, when we hovered a mouse on the bulb icon, we discovered the "Switch phase." In fact, it was accidental learning. We did not get the idea from other resources in our quick search. As indicated in settings, the system did not function with "automatic switching."

When we discovered the icon and its function, we were happy to move ahead. We conducted individual orientations to a few other course instructors involved in the research process. Some of them agreed and learned the process but later, they did not implement it. None of the course facilitator(s) of other courses implemented this kind of activity with that reason, we could not involve other faculties as planned in the study.

Implementation of the activity in a graduate course was excellent for learning a new way of students' assessment for online, distance, and face to face mode of teaching. It has given us many insights.

- A new method of engaging students in learning. This was never tried in the past.
- Workshop provides the base for both learning and assessment.
- An ease of keeping track of the peer review process and assignments.
- Effective when authors and reviewers are anonymous.
- Essential tool for online and distance mode of teaching and learning in higher education.
- Content-wise, students can learn from peers, and if they have the ability, they can make insightful comments and provide feedback for peer's improvement.
- When course facilitator(s) are busy in their usual academic affairs, they may set such peer review activities to engage students.
- To start setting up and switch to different phases of the Workshop, course facilitator(s) need to pay full attention to learning the software and implementing it.

Thus, we enjoyed learning through this research process. This activity could be implemented in any courses offered in higher education anywhere--whether online, distance, or face to face--as an effective tool to engage students for peer- and self-assessment.

Context, construction, and reflection of workshop activity phases. We completed different phases: the Setup phase, the Submission phase, the Assessment phase and the Grading and Evaluation phase and finally closed the activity. In the first phase, teachers need to set up all of the options given in the activity phases. Once all components of each of the options are carefully set up, setting up phase is complete. Then course facilitator(s) needs to manually switch to submission phase using the light bulb icon. In the submission phase, instruction for assessment and allocation is important. Course facilitator(s) set aspects (as shown in Table 1) of evaluation to assess submissions, and they also set the process of allocation

which can be random or manually selected. In this phase, course facilitator(s) may allow students to submit late. We had five aspects set in a course. For ease of students' peer-assessment, we indicated marks to use for each aspect. We also selected random distribution, which automated the allocation of submissions for peer-review. Likewise, in the assessment phase, facilitators had no role. Students were engaged in reviewing, grading, commenting and providing feedback to their peers.

Before closing the activity, the last phase was grading the evaluation phase. We graded each student's assessment with final remarks for course facilitator(s) and then the system automatically re-calculated final grades for assessment and submission depending on the weight defined in the settings of grade and grading of the course facilitator(s). Course facilitators must write concluding remarks to complete this phase and switch to closing the activity. Here, we noticed an important feature that without passing to the closing phase, grades are not displayed into a grade book of the students.

Thus, there are many important tools in Workshop that support both students and course facilitator(s) in the teaching and learning process. However, if the course facilitator(s) do carefully navigate and set up the process, they may find it hard to implement as many course facilitator(s) in many contexts tend to resist change. They may feel overburdened at the outset while mastering the Workshop. However, this tool would contribute to change learning culture (Pangeni, 2016) in higher education by facilitating the learning as a part of assessment.

Workshop Activity: Participants' Experience

Self and peer review was a new experience for participated students. They enjoyed completing the process of peer review, followed by an assessment. They expressed self-realization about their own level of performance such as the use of standard language, depth of content, clarity of the work, development of an arguments, fairness in distinguishing friends' level of performance, ability to know their own drawbacks, and performing back to back work. Also, the challenge of being critical to and comparing their own work with their peers. Some of the participants shared that this was their first experience with peer review, so they did not have any other instances to compare with peer review in the Workshop feature of LMS. As such, some of the participants felt comfortable but some were confused as to how, when and what to do. Nonetheless, the overall experience of all participants was to say such Workshop provides opportunities for learners as it is indicated in the opportunities section. Further, learning by comparing one's own work with peers in a similar task, learning by knowing others' ways of doing assignments, and even comparing the ability of grading among friends.

Regarding submission and review, students indicated generic experiences. As they reported, there was no problem with uploading their

work within the due date. All the participants made successful submissions of their work on time. However, one of the participants made a mistake by uploading the wrong file. As there was no editing options available to replace the submission, he could not correct his submission. Later he requested the course facilitator(s) to make necessary corrections and assign the review of his work to other friends. Some of the participants experienced a hard time with the peer review as they were assigned three peers to be reviewed. They felt it was an overload of work to review three peers' work at a time. Likewise, it was hard to review peers' work by comparing with previously learned concepts, relate the ideas as the process of learning, and review the depth of the contents. However, some participants clearly mentioned that it was easy because of the clear review guidelines and indicated aspects for the required marking.

Conclusions and Ways Forward

The major action goal was to explore the practice of creating Workshop in e-learning courses by replicating the same process. From this study, we noticed that such activities are somehow meaningful for learning at a higher education regardless of the nature of the courses.

Although this research was short termed, it has been meaningful to understanding problems and taking initial interventions to solve those specific problems on the Moodle-based assessment system. Through the initial intervention of this action research, Workshop is introduced and examined for its functionality and effectiveness. Our observation is that in addition to the usual forms of assignments such as uploading a file (e.g., .doc, .docx, .ppt, .pptx, etc.), administering quizzes, assigning written work, using collaborative wiki, giving choices in the Moodle learning management system (for choosing presentation topics as per priority of first come first service), and involving students in forum discussion, Workshop is unique. A major insight is that it is functional, creating no problems, easy to implement, helps course facilitator(s) to reduce their workload, and empowers students in learning by reading and evaluating peers' work.

In multiple ways, such activities are beneficial for both students and course facilitator(s). Therefore, the future focus should be to implement such an assessment tool in all the courses at least one time in a semester. However, all course facilitator(s) need technical orientation to implement the tool. Likewise, such research would be informative if continued for a longer period that can cover the practice of such assessment tool in all courses and all semesters of a program, so that course facilitator(s) can see how it works from multiple perspectives in diverse nature of courses and activities. Additionally, we also contributed to create synergy among students and the course facilitator(s) for learning by using the self- and peer-review process and motivate them with the Workshop. Finally, the longer study would confirm

its effectiveness in all the courses to be offered in upcoming semesters in higher education.

Further, technological tools for Workshop is innovative with the power to change pedagogical practices, and the major challenge lies with the course facilitator(s) because they lack technical skills to design, create and implement the activity. To strengthening Workshop, in-house faculty training sessions are required for course facilitator(s) for support to start with. It is not hard to create and implement such activities for quality learning purposes. It is vital to understanding the creative and innovative nature of assessment that enhances a higher order of thinking regardless of the nature of learning subject and context in higher education.

It is noted that there are both opportunities and challenges in Workshop in the Moodle system, the biggest challenge being that many course facilitators are not aware of this important and useful feature of Workshop. As a result, students are missing this very useful tool of peer- and self- assessment for learning in higher education. Therefore, KUSOED, as well as other universities throughout the world, can train all course facilitators to design, create and use these types of activities for peer- and self-assessment. For that universities can offer in-house faculty workshops and professional development sharing sessions. Such events would encourage the course facilitator(s) to learn new ways of student assessment. After creating Workshop in the LMS, course facilitator(s) can conduct orientation sessions for students on the use of the Workshop.

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Appendix
Workshop Activity as a Tool in LMS

As described in Moodle documentation, Workshop Activity is a powerful self and peer assessment activity. The documentation on Workshop Activity settings explains the different options available, for example, students submitting their own work and then receiving a number(s) of submissions from other students, which they will assess according to the course facilitator's specifications or rubrics (aspects). Even more, they may also assess their own work if the facilitator(s) allows this option. Text may be typed directly into Moodle's editor, or files of any type may be uploaded. The course facilitator(s) can decide whether to show or hide the identities of the students when assessing is taking place. Two grades are given and appear in the Grade book: A grade for the student's own submission and a grade for

the quality of their peer assessment. The workshop is primarily a student-focused activity; however, the course facilitator(s) may guide the students by providing example submissions for them to try out before assessing their peers and at the end of the Workshop Activity the course facilitator(s) may publish some good (or less good) examples as references.

Protocol Review of Workshop Activity in Moodle

Workshop Activity

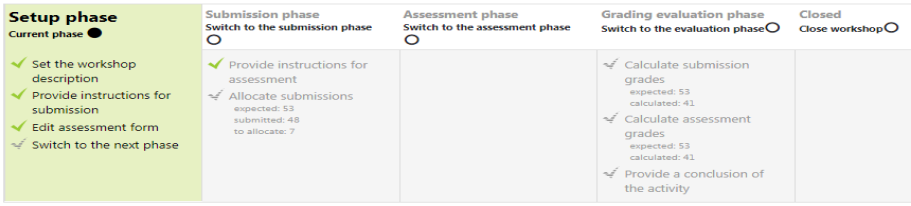
It is an activity for peer assessment, where students submit their work using online text or uploaded files (e.g., self-reflection). Thereby, student's submissions can be reviewed by other students (peers), themselves, or the course facilitator(s). In this regard, students receive two grades in the grade book i.e., submission grade (how was the peer-rated), assessment grade (for timely submission). However, students can review their ratings and comments from their peers.

Workshop Module Phases

The following phases (1-5) of snapshots were adopted from the course protocol used by Kathmandu University School of Education for the online, distance, and face to face mode of study in Master, M Phil and Ph.D.

1. Phase 1: Setup

Setup phase



Description

Dear learner, please read the learning resources carefully.

Also, read all the post/comments that are posted in Learning Activities LA1 and LA2.

Essay

Then write an essay on "E-Research Conceptualization" within 1000-1500 words (200-300 words in each heading).

The essay must include five headings as below.

1. E-research: Introduction and evolution
2. E:Research: Conception and Misconceptions
3. E-Research: Tools and Opportunities
4. E-Reseach: Tools and Challenges
5. E:Research: Way forward

Then submit your assignments latest by 15 July [mid-night].

Evaluation

This assignment covers 20 marks in total.

This assignment will go through the peer review process. Once you submit your assignment, I will forward your submitted essay to your peers (3 students). They all (3 peers) will evaluate your assignments based on rubrics given below and gives comments on your work and also give a score between 1-10.

The peer evaluation process ends by 22nd July, and you will get average marks.

As a part of the learning community, you also need to evaluate others work based on the same rubric and give a score by 22nd July.

Please remember,

You will get

1. Maximum 10 marks from your essay submission on an assigned date if not you will not get any marks for submission
2. Maximum 10 marks from your evaluation work that you do on others essay (3 students)

Rubrics

Essay: E-Research Conceptualization Headings	1 point	2 points
E-research: Introduction and evolution	Minimal idea development	Arguing with citation
E:Research: Conception and Misconceptions	Minimal idea development	Arguing with citation
E-research: Opportunities	Minimal idea development	Arguing with examples and tools
E-research: Challenges	Minimal idea development	Arguing with examples and tools
E:Research: Way forward	Minimal idea development	Arguing with self-reflection

Total Marks =10

2. Phase 2: Submission

Submission phase

Setup phase Switch to the setup phase	Submission phase Current phase	Assessment phase Switch to the assessment phase	Grading evaluation phase Switch to the evaluation phase	Closed Close workshop
Set the workshop description Provide instructions for submission Edit assessment form	Provide instructions for assessment Allocate submissions expected: 53 submitted: 48 to allocate: 7 There is at least one author who has not yet submitted their work Switch to the next phase		Calculate submission grades expected: 53 calculated: 41 Calculate assessment grades expected: 53 calculated: 41 Provide a conclusion of the activity	

Instructions for submission

Dear learner, please read the learning resources carefully.

Also, read all the post/comments that are posted in Learning Activities LA1 and LA2.

Then write an essay on "E-Research Conceptualization" within 1000-1500 words (200-300 words in each heading).

The essay must include five headings as below.

1. E-research: Introduction and evolution
2. E:Research: Conception and Misconceptions
3. E-Research: Tools and Opportunities
4. E-Reseach: Tools and Challenges
5. E:Research: Way forward

Then submit your assignments latest by 15 July [redacted] [mid-night].

Workshop submissions report

Submitted ([redacted]) / not submitted ([redacted])

First name / Surname	Submission / Last modified
[redacted]	E- research conceptualization modified on Monday, 15 July 20[redacted], 1:25 PM
[redacted]	E-Research Conceptualization modified on Saturday, 27 July 20[redacted], 6:39 PM
[redacted]	E-research conceptualization modified on Tuesday, 23 July 20[redacted], 5:47 PM
[redacted]	No submission found for this user
[redacted]	E- research Conceptualization Essayation modified on Monday, 15 July 20[redacted], 11:33 AM
[redacted]	E-research Conceptualization modified on Monday, 15 July 20[redacted], 5:33 PM
[redacted]	E-Research Conceptualization modified on Saturday, 13 July 20[redacted], 4:36 PM
[redacted]	E-research Conceptualization modified on Monday, 15 July 20[redacted], 10:58 PM

3. Phase 3: Assessment

Assessment phase

Setup phase Switch to the setup phase	Submission phase Switch to the submission phase	**Assessment phase** Current phase	Grading evaluation phase Switch to the evaluation phase	Closed Close workshop
✓ Set the workshop description ✓ Provide instructions for submission ✓ Edit assessment form	✓ Provide instructions for assessment ✗ Allocate submissions expected: 53 submitted: 48 to allocate: 7 ⓘ There is at least one author who has not yet submitted their work	✓ Switch to the next phase	✓ Calculate submission grades expected: 53 calculated: 41 ✓ Calculate assessment grades expected: 53 calculated: 41 ✓ Provide a conclusion of the activity	

Workshop grades report

First name / Surname	Submission / Last modified	Grades received	Grades given
[redacted]	E- research conceptualization modified on Monday, 15 July [redacted] 1:25 PM	**4** (9)< Madan Prasad Baral	5 **(10)**> SAROJ BOGATI
		8 (9)< Daan Bahadur Kathayat	7 **(10)**> Binod Neupane
		6 (10)< Balkrishna Sharma Ghimire	8 **(9)**> Nab Raj Poudel

Instructions for assessment

Dear Students, please evaluate the work based on the following rubrics.

Essay: E-Research Conceptualization Headings	1 point	2 points
E-research: Introduction and evolution	Minimal idea development	Arguing with citation
E:Research: Conception and Misconceptions	Minimal idea development	Arguing with citation
E-research: Tools and Opportunities	Minimal idea development	Arguing with examples and tools
E-research: Tools and Challenge	Minimal idea development	Arguing with examples and tools
E:Research: Way forward	Minimal idea development	Arguing with self-reflection

Total Marks =10

4. Phase 4: Grading Evaluation

Grading evaluation phase

Setup phase Switch to the setup phase	Submission phase Switch to the submission phase	Assessment phase Switch to the assessment phase	**Grading evaluation phase** Current phase	Closed Close workshop
✓ Set the workshop description ✓ Provide instructions for submission ✓ Edit assessment form	✓ Provide instructions for assessment ✗ Allocate submissions expected: 53 submitted: 48 to allocate: 7 ⓘ There is at least one author who has not yet submitted their work		✓ Calculate submission grades expected: 53 calculated: 41 ✓ Calculate assessment grades expected: 53 calculated: 41 ✗ Provide a conclusion of the activity ✓ Switch to the next phase	

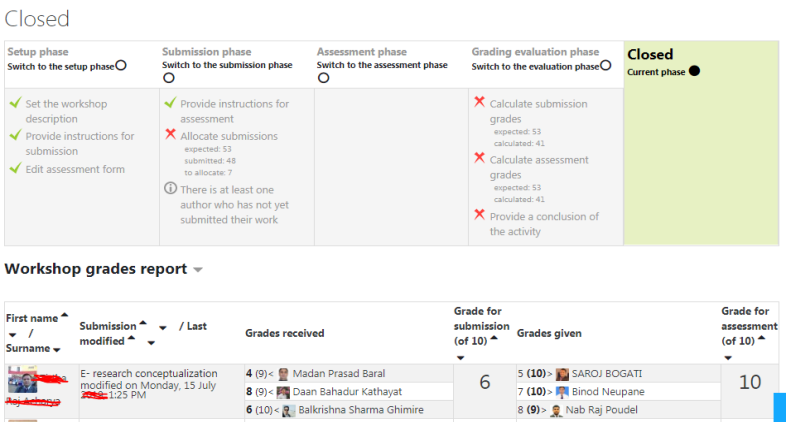
Grading evaluation method: Comparison with the best assessment

Grading evaluation settings

Comparison of assessments: fair

Re-calculate grades

5. Phase 5: Closed



Features of Workshop Module Phases

1. Can only be in one phase at a time;
2. Can manually switch between all phases and automatically switch between some phases.

Workshop Assessment Special Notes

- Students are required to submit work;
- Facilitators cannot edit student responses directly;
- Students will not see an average rating per item;
- Students ratings and comments can be seen in Moodle online protocol of courses.

Guidelines used for Interview

1. What did you feel when peer review assignment was assigned to you? (Opportunities and Challenges)
2. Were you able to submit the assignment in time? If no why? If yes, was there any problem?
3. Were you clearly aware about the assignment? What to do? How to do? When to do?
4. Were you clear about assessment instruction (different aspect of review)
5. Did you notice any lacking in review instruction?
6. Did you enjoy assessing peers? Yes how? No why?
7. How did you assess peers submission?
8. What was the base of marking?
9. Please describe what you learnt through peer review?
10. Do you have any suggestions or feedback regarding peer review?
11. How will be Workshop can be used effective? Any suggestion?

Sample Interview Transcribed

Question Initiation: Please share, what did you feel when peer review assignment was assigned to you? (Opportunities and Challenges)

Response: Google sketch up was a bit challenging and since I was not so much into ICT, I found it a bit harder, but later, when our teacher introduced us with ICT classes and taught us about the procedure, I found it much easier. I continued with discussion and through 'Need' I completed the task. Even more, I got to see each other's writing, and marked it as well. This really was a good opportunity to learn new ideas through sharing of ideas.

Question: Were you able to submit the assignment in time? If no why? If yes, were there any problems?

Response: Yes, I did and submit assignments on time. Excluding some few who had a problem in understanding the procedure, almost all did submit on time. Particularly, with me, there was no any issue.

Question: Were you clearly aware about the assignment : What to do? How to do When to do?

Response: About the procedure, I was clear enough because though I did not Computer for Maths purpose in particular, I was familiar with its use, and when I was guided once, it was no longer a problem for me. I found it really interesting to use ICT even in maths because this was something totally new experience for me. I was not at all clear about the concept of Peer Review and was wondering whether we would have discussions or something else. I had completed the assignment though, and was just waiting for further instruction. Later, when we were told that we would even mark our peers' assignments, I was excited about it because this was a totally new practice for me. we conducted the whole process along with discussion.

Question: Were you clear about assessment instruction (different aspect of review)?

Response: Yeah… I was pretty clear about the instruction but then we it basing what I got to read from our peers good marks for the good ones.

Question: Did you notice any lacking in review instruction?

Response: Nothing as such because I got the instruction pretty clear and aspects were ranked from 1 to 5 with the range of 1-2 points. It was all marked according to the quality of our peer's writing.

Question: Did you enjoy assessing your peers? Yes how? No why?

Response: Yeah it was a real pleasure to have an opportunity to mark our peers for the first time, as it was always teachers who had this opportunity, so I did enjoy the process thoroughly.

Question: How did you assess peers submission?

Response: I went through peers' assessment thoroughly and then marked it according to the quality of their work as said earlier: good marks for the good ones. I was not aware of any guidelines as such as I just marked our peers on the basis of our reading.

Question: What was the base of marking?

Response: The writing itself and as it was focused on Geogebra, I just looked for its presence the most. I focused on the content and gave more importance to the content itself. Even more, I used the marking instructions given.

Question: Please describe what you learnt through peer review?

Response: I felt that we get to learn many things through discussion and sharing of ideas. For instance, when I read my friends assignment when they go through my writing, I obviously get to learn something new. The learning process was overall a good one.

Question: Do you have any suggestion or feedback regarding peer review?

Response: I don't think I have any because the process, personally for me was good and I thoroughly enjoyed it.

Question: How will be Workshop can be used effective? Any suggestion?

Response: It was over all very interesting and fruitful, yet again, I felt that if we were given an opportunity to showcase our individual talent making use of the software, I guess it would have been more effective.

Author bios

Niroj Dahal, M Phil is working in the position of Research Assistant at Kathmandu University School of Education under NORHED Rupantran Project. Prior to that he has been working as a visiting faculty member of Kathmandu University School of Education (KUSOED) and Kathmandu University School of Arts (KUSOA), Hattiban, Lalitpur, Nepal in M. Ed in Mathematics Education, M Phil and Bachelor programs as well as visiting faculty member of Nepal Open University (NOU) under Faculty of Social Sciences and Education, Manbhaban, Lalitpur, Nepal in M Phil programs. Areas of his research interests are ICT in Education, Mathematics Education, Open, Distance & e-Learning, STEAM Education focusing on Technology & Mathematics and ICT & e-Research. For more than a decade, he has been teaching graduate and undergraduate students. Also, he has been continuously participating in more than a dozen national and international conferences, workshops, and seminars. He has published articles in a variety of national and international journals in the field of mathematics education by integrating ICT tools.

Shesha Kanta Pangeni, PhD is an Asst. Professor of Educational Leadership at Kathmandu University School of Education under the Department of Educational Leadership. He has been professionally involved in the field of education for more than two decades in Nepal. He also worked as a guest researcher at Oslo Metropolitan University (OsloMet), Oslo, Norway for a year during his PhD exchange visit. His Ph.D. was funded by The Norwegian Program for Capacity Development in Higher Education and Research for Development (NORHED) and the PhD project was related to web technology in higher education. Areas of his research interests are Educational Leadership, Mathematics Education, Web Technologies in Higher Education, Online and Distance Learning, and ICT in Education. He has presented many international conference papers in Asia, Europe, and America. His past journal articles and conference papers were focused on ICT in Education, Online and Distance Education, Digital Leadership, Online Learning Culture, and e-Research Methods.