

Using Learning Diary and Peer-assessment as AfL Tools: Case Study of a Sino-Finnish Collaborative Program Course

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Abstract. Learning diary and peer-assessment as AfL tools can make students continuously engage in their learning so that their competence can be developed. In this sense, the assessment process is a learning process for the students. This study examines the effectiveness of using learning diary and peer-assessment as assessment tools in developing students' learning by exploring the implementation process, the grades of the performance, and the data got from the semi-structured interviews. Findings suggest that most of the students favor these assessment tools but still some students prefer to take traditional written exams, which needs more investigations and discussions in the future.

Introduction

The “Student-centered” undergraduate education has become an inevitable trend in the development of higher education in China. According to *Opinions on Accelerating Construction of High-level Undergraduate Education to Improve Talents' Training Ability* announced by Chinese Ministry of Education in 2018, a high-level undergraduate education should adhere to “Student-centered and Comprehensive Development” as the basic principles to foster undergraduate talents. “Student-centered” education means changing the long-term education model which focuses on teaching materials, teachers, and classrooms to student development, student learning and learning outcomes [1]. As an important part of students' education process, assessment plays a key role in the “Students-centered” education because it can provide useful feedback information to both teachers and students [2] and help them accordingly adjust their teaching and studying. Assessment for Learning (AfL), giving students the opportunity to learn and inform themselves their progress, achievements, weaknesses and then take the necessary actions to improve their performance [3], is consistent with the “Students-centered” philosophy of education in that AfL puts the students in the center of learning and can enhance their learning [4].

Learning diary and peer-assessment can be the appropriate tools of AfL. Learning diary can teach students how to think in the specific field, form and develop students' ability of reflection during the process of learning. It helps students think about what they are taught in class, reflect about experiences and activities that they have practiced before, and adjust the way of their studying [5]. Peer-assessment means students provide continuous comment and feedback to peers at various points of their learning process. The use of learning diary and peer-assessment as assessment tools can make students continuously engage with their learning so that their competence can be developed [6]. Furthermore, it makes students involved as active learners and assessors and to students, the assessment of learning is actually the process to prompt their learning [7].

In this study, the AfL tools, learning diary and peer-assessment, are examined in their effectiveness in developing students' learning. By exploring the implementation process, the grades of the performance, and the data got from the semi-structured interviews, we can find the strengths as well as the problems in these two AfL assessment tools.

Methodology

Context of the Study

Information Systems in Organizations is one of the modules in a *Software Engineering* double degree *undergraduate* program collaborated by Nanjing Institute of Technology (NJIT), China and Oulu University (OU), Finland. The students taking part in the program will study for four years at NJIT and during the four years' time OU teachers will come to NJIT to teach 19 modules in English, according to the curriculum jointly designed by the two universities. The module was taught by the OU teacher and his TA at NJIT to 93 first-year students for two weeks during the 2nd semester of 2018 to 2019 academic year.

Method of the Study

This study is a case study. It explores how the AfL tools are used in the module and the results of the students' grade given by the teachers. Besides, it uses semi-structured interviews to measure the students' perceptions on the use of learning diary and peer assessment as the assessment tools. The semi-structured interviews are based on the following questions:

Q1: How do you use Learning Diary and Peer Assessment in your course *Information Systems in Organizations*? To what extent you think this kind of assessment can facilitate your learning of the course?

Q2: What abilities can you improve by using Learning Diary and Peer Assessment in your study?

Q3: Compared with written exam, do you prefer Learning Diary and Peer Assessment more as the assessment tools? Are you willing to use Learning Diary and Peer Assessment in your future learning? Why?

Implementation Process of AfL Tools

Table 1. Quality-based and Quantity-based Criteria of Grading LDF.

Quality-based criteria	Quantity-based criteria
Learning diary entries must follow hermeneutical reflection rules given by the teachers in the first lecture.	90-100% = 11-12 learning diary entries+10 or more comments
The usual plagiarism / referencing principles apply when students write learning diaries and comments.	80-89% = 9-10 learning diary entries+9 comments
Students should provide constructive feedback outlined by the teachers in the first lecture to their peers.	70-79% = 8 learning diary entries + 8 comments
The written English language needs to be grammatically correct.	65-69% = 7 reflective learning diary entries + 7 comments
	60-64% = 6 learning diary entries + 6 comments
	Less than 60% = less than the minimum requirements for 60-64%

The module consists of 10 lectures. In the first lecture, the teacher provides students the learning goals, including common content-based goals and secondary learning goal to train communication skills (reading, writing) in English, as well as to develop the thinking and reflection skills of the students. Every student is required to write a reflective diary concerning every lecture (except the first introductory lecture) and the related case study and related studying materials which have been provided by the teacher in Moodle (an on-line learning system of the double degree program). These learning diaries are called "entries." Additionally, the students are divided into groups of 4 or 5 peers in which each student needs to comment every peer student's diary entry at least twice during the course by using the comment function of the discussion forum in Moodle. In the end, every student needs to gather a Learning Diary File (LDF) which consists of the part listing every learning diary entry in the chronological order, as well as the peer-assessment comments to other students' diaries in the chronological order as the second part. The LDF will be delivered as a whole

to Moodle and then graded by the teacher and the TA. The grading criteria (Table 1) concern both the quality of LDF and the quantity of entries and comments.

At the end of all the lectures, the teacher gives the students an optional written test on the contents of the module. The result of the written test is not calculated as part of but as a bonus to students' final grade of the module.

Findings and Discussions

Students' Performance in LDF and Written Test

By using these AfL tools, most students go through the reflective and constructive processes through answering the following questions and the learning diaries and comments are the evidences of their engagement in their own learning and achievements.

(1) What?—What did I learn in the lectures?

(2) Why?—Why do we learn it? What's the relationship between the knowledge of the lectures and the learning goals of the module?

(3) How?—How can my learning add to my understanding about the module?

(4) What? Why? How?—What opinion do I think my peer is reasonable or not? Why do I think so? How can I find something from the module to support my ideas?

The grading results (Table 2) of LDF show that 92.5% of the 93 students have met the minimum criteria and 79.6% of them have got the level 70% and above. This indicates that most students develop their ability of self-reflection, critical thinking, and communicative ability during the process of writing learning diaries and comments which are listed as the goals of the module.

Table 2. Distribution of Grading Results.

Score	Students No. & Percentage
90-100%	33 / 35.5%
80-89%	23 / 64.8%
70-79%	18 / 19.4%
65-69%	8 / 8.6%
60-64%	4 / 4.3%
Less than 60%	7 / 7.5%

The optional written exam performance, furthermore, supports the improvements of the learning of those students who have got good grades in their learning diaries and peer assessment. Thirty students have got the bonus which can raise their final grade by 10% after they take part in the written exam and these thirty students nearly have got 80% and above in their LDF. That means, the good performance in written test corresponds to the good performance in LDF.

Strengths of AfL Tools Used in this Study

As reported by the students in the semi-structured interviews, using learning diary and peer-assessment as AfL tools have the following strengths:

(1) Help to review the contents of lectures, and acquire more knowledge on the topic by reading peers' diaries and looking for more information on Internet;

(2) Facilitate learning by combining students' own thoughts with the knowledge learned from lectures and got from the communication with teachers and peers;

(3) Facilitate the quality of learning process and make students' involved in learning;

(4) Increase the interests, motivation, and confidence in learning because it is a process of learning as peers rather than subordinates; Help to develop the ability of self-discipline and self-regulated learning, and form the habit of long-life of learning;

(5) Help to develop the competence of critical and divergent thinking as well as the communicative abilities in English such as reading, writing and summarizing.

These data from the interviews support the view that learners may be actively engaged in their learning process and define their own studies in order to reflect on their achievements [4]. Most of interviewees prefer AfL tools to conventional standardized tests in that by using learning diary and peer-assessment, they can manage their learning by themselves and improve gradually. They are more motivated to learn because they believe in “You get what you pay for.” As one student said in the interview, “I’d like to use this method because this will be a perfect interpretation of the pay will be rewarded, can stimulate the confidence of a good student. I believe that people who work hard do not know how to use them skillfully, but they will not be mastered.”

Problems of AfL Tools in this Study

Some problems also exist when learning diary and peer-assessment are used as tools to assess students’ learning. In the interviews, a few students express their different opinions,

“Writing learning diaries and comments every day wastes a lot of time. I do not know how to write them and it takes me longer time to write time than to memorize the knowledge of the lectures. I prefer written exams instead.”

“I think some students do not have the motivation to write and they even do not take it seriously. They don’t regards learning diaries and comments as assessments. In their minds, only written exams are assessments.”

Two main problems can be summarized from interviews: (1) “Exam” is mistakenly regarded as “assessment” in the learning process. Some students learn just for taking exams and passing the exams. (2) Some students don’t know how to write learning diaries and comments because these AfL tools are so different from what they were taught in middle schools and they feel puzzled.

It cannot be denied that those two problems actually exist (or even popular) in today’s universities in China. As Zhang [8] writes in his paper entitled *Teaching Reform from Students’ Aspect: Guide Students to Change Learning Habits*, teachers feel puzzled about adopting the “Student-centered” teaching methods because they think students are lack in the competences to adjust to the new methods. Students think that they are short of the learning time and new methods of learning are waste of their time. Why AfL tools make some students disengaged in learning will not be discussed in this study but definitely needs more detailed future investigation.

Summary

Learning diary and peer-assessment are used as AfL tools in the module *Information Systems in Organizations*. They are comparatively new tools of assessment for university students in the Chinese context. They are favored by most of the students, as is discussed in the previous part, to help them acquire knowledge, develop their competence and motivate them to learn. Furthermore, these tools put the focus on the students’ learning because the assessment process for the teachers is also a learning process for the students, which matches the “Student-centered” education philosophy. They help students engage in a learning process to think about how to review their everyday lectures, how to relate their everyday lectures to the whole module, how to write critically and how to communicate well their peers on their opinions etc.

However, AfL tools are not very favored by some students who took part in the interviews, which can explain the results of the grades that 7.5% of students get below 60% and regarded as failure of the module. The problems revealed needs more investigations and discussions in the future researches on AfL topic.

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