Faculty of Liberal Arts and Social Sciences

BN2029 Investigating the Effect of Online Collaborative Learning on Students' Learning Outcomes in Higher Education

Speaker: Dr LAM Wai Man Winnie (winnielam@eduhk.hk)
Lecturer I, Department of Mathematics and Information Technology

Winnie W. M. Lam
The Education University of Hong Kong
1 Lo Ping Road, Tai Po
Hong Kong
(852) 2948 8521
winnielam@eduhk.hk

Haoran Xie
The Education University of Hong Kong
1 Lo PingA Road, Tai Po
Hong Kong
(852) 2948 8545
hxie@eduhk.hk

Kevin W. H. Yung
The Education University of Hong Kong
1 Lo Ping Road, Tai Po
Hong Kong
(852) 2948 7522
kevinyung@eduhk.hk
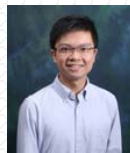
Dennis Y. W. Liu
The Hong Kong Polytechnic University
Hung Hom
Hong Kong
(852) 2766 7249
csdennis@comp.polyu.edu.hk

TDG Project: A Study of Online Evidence-based Assessment System to Promote Collaborative and Cooperative Learning in Group Activities

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Online Collaborative Learning System (GMoodle)

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ABSTRACT

This paper examined the effect of using an online collaborative learning platform on students' learning outcomes in higher education. An online collaborative learning platform called *GMoodle* was implemented at The Education University of Hong Kong. To investigate the benefits and drawbacks of online collaborative learning, students were invited to complete the pre-test and post-test questionnaires to evaluate their learning outcomes. The quantitative and qualitative studies of 75 undergraduate students were conducted based on the pre-test and post-test questionnaires and focus group interviews, and the results showed that students' learning outcomes especially self-management skills and collaborative skills were enhanced through the online collaborative activities. In the pilot study, training was provided for in-service and pre-service teachers. Most of them reflected that *GMoodle* is a useful platform for educators to understand students' learning progress, promote active collaboration and facilitate team teaching across different disciplines. Not only the students but also the teachers benefited from this online learning platform for collaborative learning, fair assessment, and team teaching.

#evidence-based   #assessment
#collaboration
#Group   #active   #feedback

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BACKGROUND

TDG 2018/19 Specific theme: Assessment

Period: July 2018 – June 2019 (12 months)

Issues of group assessment:

- Low level of individual responsibility in group (Summer, 2016)
- Diffusion of responsibility in groups
- Bias in peer review (Ashenafi, 2015; Dochy et al., 2006; Topping, 2005; Falchikov & Goldfinch, 2000)
- Teachers are difficult to know the progress of each group/ student

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OBJECTIVES

INTERACTION
Promote active and collaborative learning environment through peer online interaction

PARTICIPATION
Increase the level of participation of group members in learning activities

IMPLEMENTATION
Implement an online evidence-based assessment system for group projects and activities

FAIR ASSESSMENT
Perform a fair and reliable peer assessment to reflect individual's contribution within a group

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PROJECT TEAM MEMBERS

Principal Project Supervisor:
Dr. Lam Wai Man Winnie / Lecturer I

Co-supervisors:
1. Dr. Cheng Kwok Shing Gary/ Associate Professor
2. Dr. Lai Yiu Chi/ Associate Professor
3. Dr. Xie Haoran/ Assistant Professor
4. Mr. Chui Hin Leung Mike/ Lecturer I
5. Dr. So Chi Fuk Henry/ Lecturer I
6. Dr. Ling Man Ho Alpha/ Assistant Professor
7. Dr. Song Yanjie/ Assistant Professor
8. Dr. Poon Kin Man Leonard/ Assistant Professor
9. Yung Chi Hoi/ BEd(S)-ICT student
10. Wong Ming Ho Justin Dominick/ BEd(S)-ICT student
11. Yeung Wing Ho/ BEd(S)-ICT student

Research Assistants:
1. Liu Chun Yin Chris/ CUHK
2. Lo Kai Hong Issac/ EdUHK Graduate
3. Lai Mincong Louis/ EdUHK Graduate

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PROJECT SCHEDULE

July 2018 – June 2019 (12 months)

Period (MM/YY)	Work plan / Activities
07/18 – 09/18	- Design and Construct the Online Evidence-based Assessment System - Prepare survey questions for pre/post test - Provide training workshop for the involved teachers
09/18 – 11/18	**Phase I Testing**: Use the Online Evidence-based Assessment System in **5 courses**
12/18	Collect feedback from Phase I - Fine tune the system
01/19 – 05/19	**Phase II Testing**: Use the revised system in **4 courses**
05/19 – 07/19	- Perform data analysis with the activity log data - Focus group interviews with students for investigating the effectiveness of the system - Collect sample course plans from teachers for the sharing session - Prepare conference paper to report the result
05/19 – 08/19	Sharing sessions

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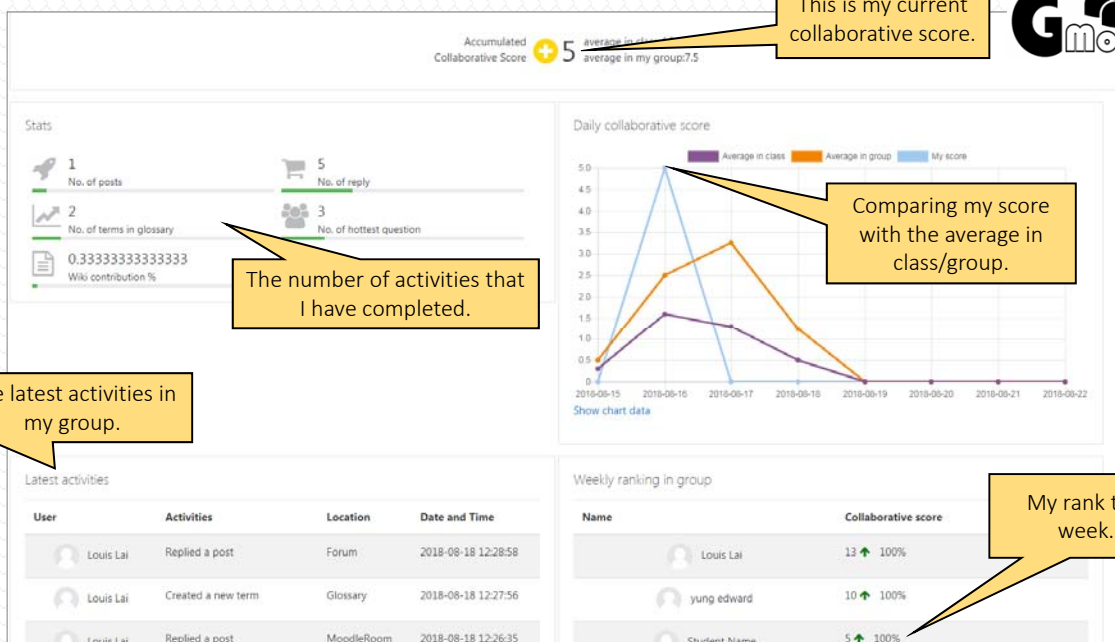on Students' Learning Outcomes in Higher Education

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GMoodle
https://gmoodle.eduhk.hk
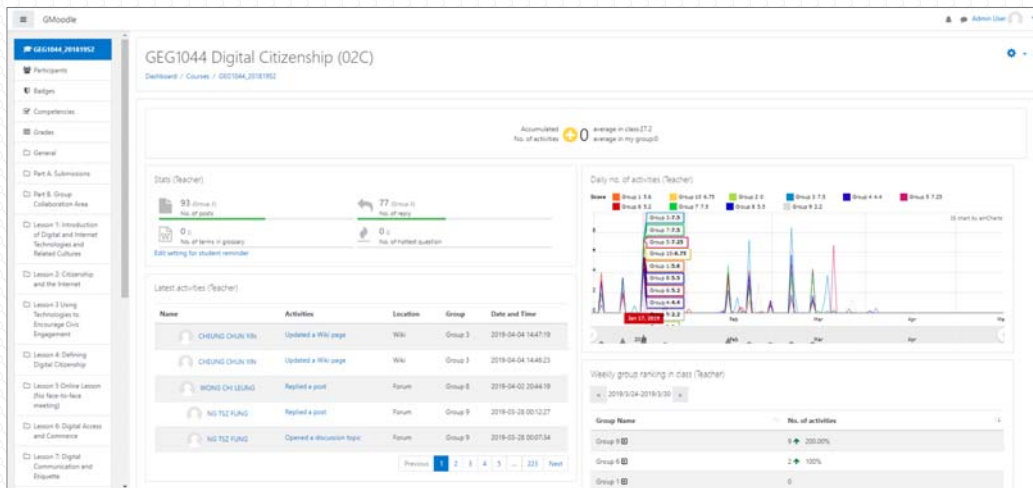
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This is my current collaborative score.

Comparing my score with the average in class/group.

The number of activities that I have completed.

The latest activities in my group.

My rank this week.

GMoodle vs. Moodle

	GMoodle	Moodle @ EdUHK
Common activities: • Assignment, Chat, Choice, Database, Feedback, Forum, Glossary, Group choice, Lesson, Quiz, SCORM package, Survey, Wiki, Workshop	✓	✓
Wiki with individual contribution %	✓	✖
Progress report (individual and group)	✓	✖ (not easy to read)
Turnitin assignment	✖ (pilot)	✓
Single Sign-On login	✖ (pilot)	✓

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PRE-TEST & POST-TEST SURVEY

Communication / Problem-solving / Collaborative / Self-management skills

a) Communication skills
1. I can communicate effectively with my groupmates
3. I am good at understanding of others' points of views

b) Problem solving skills
2. I am competent in solving the problems in my group, and can take initiative to resolve issues
5. I think online learning tools (such as Moodle, Google Docs) can help to finish group project effectively
12. I have a strong sense of accomplishment relative to our group work

c) Collaborative skills
1. I can communicate effectively with my groupmates
3. I am good at understanding of others' points of views
7. I am clear about the contribution of everyone in the group, and avoid duplication of effort
8. I can establish trusting and supportive relationships with my groupmates
9. I usually seek and give my groupmates constructive feedback
10. I can collaborate effectively with my groupmates
11. I can identify free rider in my group before completing the project
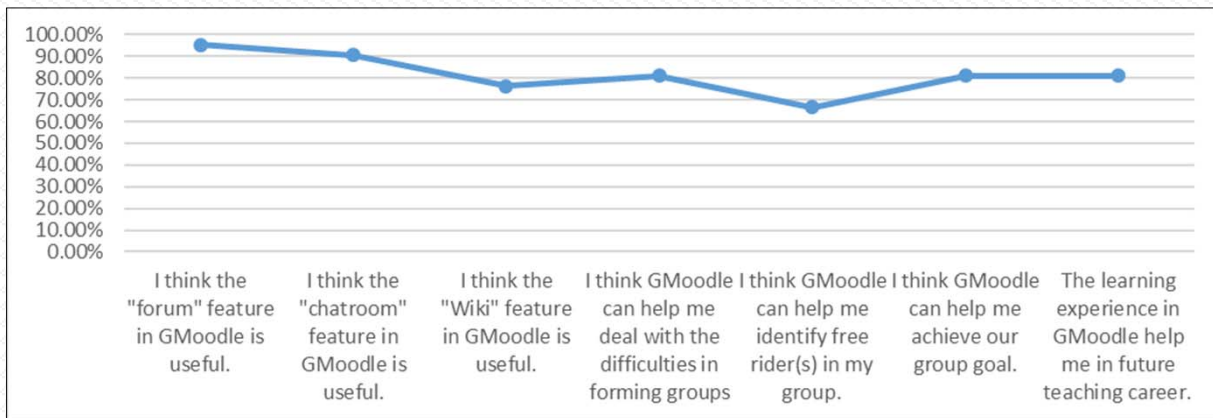
d) Self-management skills
4. I take responsibility for my own learning in the group

e) Others
6. I prefer online discussions more than face-to-face meetings

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Evaluation of GMoodle's features

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DATA ANALYSIS

t-test with SPSS

Semester 1, 2018-19	0.373	62.7% Confidence level
↑ Semester 2, 2018-19	0.174	82.6% Confidence level

Overall (Sem1 + Sem 2)	0.178	0.163	0.064
	82.2% Problem solving skills	83.7% Collaborative skills	93.6% Self-management skills

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FEEDBACK FROM FOCUS GROUP INTERVIEW

STUDENTS' PERSPECTIVE

Understand the progress of oneself and group mates

Consolidate information and share ideas easily

Identify free-riders

Some of the features are similar to Moodle

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CONCLUSION

This study showed that GMoodle can

- help students to improve their problem solving, collaborative and self-management skills;

- encourage collaboration in group learning activities;

- review learning goals and progress;

- motivated students with participation score;

- identify free-rider;

- inspire them using online collaborative learning in the future teaching career.

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THANK YOU

Dr LAM Wai Man Winnie
winnielam@eduhk.hk
Department of Mathematics and Information Technology
The Education University of Hong Kong, Hong Kong