THE CHINESE UNIVERSITY OF HONG KONG

Micro-Module Courseware Development Grant

Scheme 3: eLearning Pedagogy Research

<u>Final Report (2016-17)</u>

<u>PART I</u>

Project title: Roles of Micro-modules Implementation in a Blended Learning Environment of UGFN1000

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Department / Unit: Office of University General Education

Project duration: From May 2017 to Aug 2018

Date report submitted: 31 August 2018

1. Project objectives

Is the project on track to meet its objectives?
Yes, the project is on track to meet its objective.

Have the objectives been changed as a result of the experience of working on your MMCDG
No changes in objectives have been made.

Has the project created any impact as expected?
The findings of the project have informed teachers about the possible effects of implementing micro-modules, coupled with online discussion forum. The findings have highlighted the synergistic effects when both micro-modules and discussion forum are implemented together. It also compared the learning effectiveness of online lecture and online discussion to face-to-face lecture and discussion. The findings were presented in local and international conferences.

2. Process, outcomes or deliverables

Please specify the number of micro modules produced, and the course(s) (with course codes and titles) that have used the micro modules in Part IV, and provide more detailed descriptions in here. Must specify duration of each micro-modules (in terms of students online contact hours), total duration time of all deliverables and style.   (With reference to the "Summary of video presentation styles" developed by CLEAR)
The team has produced around 160 videos in total, with support of three MMCD grants. The micro-modules were used in UGFN1000 "In Dialogue with Nature". The micro-modules aim at

supplementing students' basic science knowledge and historical and technical background for extended discussion.

Have the research design, methodology and timeline been changed/adjusted?
The overall research design has not been changed. The project still aims at examining the learning effectiveness of coupling micro-modules with online discussion and compare this setting to traditional face-to-face lecture and discussion in UGFN1000 using both quantitative and qualitative approaches.

Regarding the methodology, we have implemented a new set of online discussion topics in 2017-18. Content analysis and the result comparison of the online discussion have been carried out in 2017-18 Term 1 (compulsory micro-modules usage) and Term 2 (voluntary micro-modules usage), instead of comparing online discussion in 2016-17 to that in 2017-18. This change aims to ensure that online discussion topics could be related to the micro-modules developed.

The timeline has been met successfully as planned. Content analysis of discussion forum, online survey on ILOs, cognitive and social presences survey and the follow-up analysis have been finished on time.

Overall, was the project completed satisfactorily?
We regard the project satisfactorily completed. The research questions were addressed, with a small change in the methodology. **Two reports are attached as Appendix.**

3. Evaluation Plan

Have you altered your evaluation plans?
The evaluation plan has not been altered.

Does your evaluation indicate that you have achieved your objectives?
The research has been presented in the poster session in the Teaching and Learning Innovation Expo 2017. Primary research data has been presented in The 9th International Conference on Language, Education, Humanities and Innovation, Osaka. The presentations were well-received, indicating that the project was successful in achieving the objectives.

4. Dissemination, diffusion and impact

Please provide examples of dissemination: website, presentations in workshops or conferences, or publications.

The design and results of this study were presented in the Teaching and Learning Innovation Expo 2017 and The 9th International Conference on Language, Education, Humanities and Innovation, Osaka in 2018. Manuscript related to this project is in preparation.

Please provide examples of impact: how the research results/outcomes/findings can be extended to other disciplines.

The study is about the evaluation of the effects of integrating two pedagogies, micro-modules and online discussion. The positive results suggest that there are synergistic effects between the two. These pedagogies are not limited to general education, but could be widely adopted in various disciplines.

Please describe how the research results/outcomes/findings may support the University's strategic aims in promoting eLearning.

In this study, students' learning experience in an e-Learning setting has been examined. By the inherent advantage of a compulsory general education course UGFN1000 – In Dialogue with Nature, this study has comprehensively evaluated learners' experience in online setting by students of diverse background. The research suggested the proper integration of micro-modules and online discussion, instead of introducing them as separate elements, can enhance students' overall learning experience. Though students in general value face-to-face learning over online learning based on survey results, students' responses in the focus group interview suggested that these two settings were beneficial to their study in respective way. This shed light on the implementation of micro-modules and online discussion in other courses in higher education.

PART II
Financial data

Funds available:

Funds awarded from MMCDG	$	150,000
Funds secured from other sources	$	0
(please specify _____)		
Total:	$	150,000

Expenditure:

Item	Budget as per application	Expenditure	Balance
Research Assistant (data collection, entry and analysis)	110,000	132,229.99	-22,229.99
Hours of work by student helpers (focus group transcription, participants of focus group interviews)	11,000	5,717.25	+5282.75
Publication costs	5,000	0	+5,000
Miscellaneous items (e.g. printing of surveys, posters, software purchase)	12,000	0	+12,000
Conference expenses	12,000	12,000	0
Total:	150,000	149,947.24	+52.76

(As of 29 August 2018. There should be some minor changes due to back pay. If needed, we can supply an updated version in September.)

PART III

Lessons learnt from the project

Please describe your way forward.
The results of the study gave us confidence in integrating the micro-modules and online discussion in our course. The success of the study also encouraged us to perform similar comparative studies when we implement new pedagogical elements in our course.

Please describe any of the following item(s) accordingly:
• *Key success factors, if any*
   (1) experimental study examining the course structure by cross comparison;
   (2) suitable arrangement of the online survey and focus group interviews;
   (3) exploration of different learning activities that might enhance students' learning experience.

• *Difficulties encountered and remedial actions taken, if any*
In 2017-18 Term 1 online discussion forum, we identified that students' responses in one designed discussion forum question were not perfectly in line with the course intended learning outcomes. We have removed the question in term 2. The responses under that topic were not included in the comparison.

• *The role of other units in providing support, if any*
We did not collaborate with other units in this evaluation project.

- *Suggestions to CUHK, if any*

From the free comments of the students, they found that the KEEP platform is not easy to access. It requires them to register another account. This is one of the barriers for students to access the micro-modules. We are delighted to know that the KEEP platform can now be accessed with the University's login and password. It is suggested that these login issues should be avoided when the University implements new platform in the future.

PART IV

Information for public access

Summary information and brief write-ups of individual projects will be uploaded to a publicly accessible CUHK MMCDG website. Please extract from Part I the relevant information to facilitate the compilation of the publicly accessible website and reports.

1. Keywords

Please provide five keywords (in the order of most relevant to your project to least relevant) to describe your micro-modules/pedagogies adopted.

(Most relevant)   Keyword 1: Micro-modules

Keyword 2: Online discussion forum

Keyword 3: Community of Inquiry

Keyword 4: Blended learning

(Least relevant)   Keyword 5: General education

2. Summary

Please provide information, if any, in the following tables, and provide the details in Part I.

Table 1: Publicly accessible online resources (if any)
(a) **Project website:**   *If a publicly accessible project website has been constructed, please provide the URL.*
(b) **Webpage(s):**   The micro-modules project was featured in UGE News: http://cu-genews.com/category/learning-resources/%E7%B6%B2%E4%B8%8A%E8%   AC%9B%E5%A3%87-micro-module/

(c) **Tools / Services:**
Services: ITSC, ELITE, KEEP; Tools: SPSS, NVivo
(d) **Pedagogical Uses:**
If any flipped classroom activities have been conducted, please provide information in here. If relevant, please indicate how your project output can be used to support flipped classroom activities.

Table 2: Resource accessible to a target group of students (if any)

If resources (e.g. software) have been developed for a target group of students (e.g. in a course, in a department) to gain access through specific platforms (e.g. Blackboard, facebook), please specify.

Course Code/ Target Students	Term & Year of offering	Approximate No. of students	Platform
UGFN1000	*1st and 2nd term 2017-18*	*500*	*Blackboard, KEEP*

Table 3: Presentation (if any)

Please classify each of the (oral/poster) presentations into one and only one of the following categories	**Number**
(a) In workshop/retreat within your unit (e.g. department, faculty)	*Please insert no*
(b) In workshop/retreat organized for CUHK teachers (e.g. CLEAR workshop, workshop organized by other CUHK units)	*Please insert no*
(c) In CUHK ExPo jointly organized by CLEAR and ITSC	*1*
(d) In any other event held in HK (e.g. UGC symposium, talks delivered to units of other institutions)	*Please insert no*
(e) In international conference	*1*
(f) Others (please specify)	*Please insert no*

Table 4: Publication (if any)

Please classify each piece of publications into one and only one of the following categories	**Number**

(a) Project CD/DVD	*Please insert no*
(b) Project leaflet	*Please insert no*
(c) Project booklet	*Please insert no*
(d) A section/chapter in a booklet/ book distributed to a limited group of audience	*Please insert no*
(e) Conference proceeding	*Please insert no*
(f) A chapter in a book accessible internationally	*Please insert no*
(g) A paper in an referred journal	*Please insert no*
(h) Others (please specify)	*Please insert no*

3. A one-page brief write up

Please provide a one-page brief write-up of no more than 500 words and a short video.

In this project, we examined the learning effectiveness of online discussion coupled with micro-modules by comparing it with (i) non-coupled online discussion and micro-modules and (ii) synchronous face-to-face tutorial-lecture. These comparisons evaluated the pedagogical setting from two dimensions, first, whether the online learning components echo with each other, and second, whether online learning environment shapes a similar learning environment with face-to-face synchronous learning.

i. Online discussion coupled with micro-modules versus non-coupled setting (Appendix 1)

We examined the coupling effect by (1) students' performance in discussion forum and (2) students' perception to micro-modules. For (1), we performed content analysis to students' entries in the online discussion forum of UGFN1000 in 2017-18 Term 1 (coupled) and 2017-18 Term 2 (non-coupled) based on two coding schemes: intended learning outcomes (ILOs) and cognitive presence. For (2), we delivered online survey to micro-modules users of UGFN1000 in 2017-18 Term 1 and 2016-17 Term 1 (non-coupled) and compared their perception towards micro-modules stated in online survey.

Results suggested that the coupled setting has enhanced students' performance in discussion forum and students' learning perception through micro-modules. From analyzing the online forum entries, 67.74% of students have displayed a good reflection towards at least one of the ILOs in the coupled setting while only 37.71% of students accomplished this standard in the non-coupled setting. When examining their stage in cognitive presence, slightly more students (22.22%) have reached the third phase, "integration", in the coupled setting comparing to the non-coupled setting (16.57%).

In online survey, students' perception towards micro-modules in coupled setting was in general higher than those in non-coupled setting. Survey result suggested that, in the coupled setting, significantly more (two tailed t-test; 95% confidence level) students felt that micro-modules have increased their understanding on the development of natural science, enhanced their reflection on the social implications of scientific inquiry, enriched the materials in writing reflective journal/ term paper, allowed them to have more in-depth reflection on the related topics, and increased their understanding on the contributions and limitations of scientific inquiry.

ii. Online discussion coupled with micro-modules versus face-to-face lecture-tutorial (Appendix 2)

Online survey and focus group study were conducted in 2017-18 Term 1. A set of paired questions were inserted in the online survey to examine students' perception towards online discussion and tutorial discussion. According to the survey result, students in general favor more to tutorial discussion in both the cognitive presence and social presence perspectives. Most of the ratings regarding tutorial discussion were significantly higher than that regarding online discussion (two tailed t-test; 95% confidence level). The mean differences were computed for cognitive presence (ranges from +0.17 to +0.61) and social presence (ranges from +0.44 to +1.14). Focus group interviewees had however posed different inherent advantages of online discussion and tutorial discussion. In online discussion, they were able to express their point of view, which they did not have a chance to present during tutorials, deepen their understanding and clarify their own thoughts. Some students have suggested that they could deliver their messages in a more organized manner in the online discussion.

Conclusion

Students perceived micro-modules online discussion better and had a better performance in

online discussion when they were paired with each other. However, students in general still favor face-to-face tutorial-lecture more, when compared to the online discussion coupled with micro-modules.

Appendix 1

Report on learning effectiveness of micro-modules coupled with online discussion forum

Content analysis of discussion forum coupled with micro-modules

Purposes include:
i.   To evaluate the effectiveness of compulsory micro-modules, coupled with online discussion forum
ii. To compare the effectiveness of compulsory micro-modules, coupled with an existing online discussion, with previous course setting

To evaluate the effectiveness of compulsory micro-modules coupled with online discussion forum, we have conducted content analysis on the discussion forum threads based on two schemes: intended learning outcomes (ILOs) and cognitive presence. It is expected that students' learning could be reflected from their discussion quality. We examined students' entries in the discussion forum in 2017-18 Term 1 (Compulsory term) and Term 2 (Voluntary term), and compare students' performance in two pedagogical settings.

ILOs were assessed in two dimensions: quality and categories; each consists of 5 codes (Tables 1 & 2). During coding, ILOs achieved in each entry and the corresponding quality of each ILO were identified. It should be noted that one thread may contain more than one ILO.

Cognitive presence contains four stages: triggering, exploration, integration and solution (see table 3). Students may possess different stages within one thread, the most advanced stage in a thread was recorded.

Two coders evaluated the discussion forum independently and consensus was arrived through deliberation afterwards. In the process, one grade difference between the two coders was allowed regarding the quality of ILOs attainment, while full agreement was required for the ILOs categories and cognitive presence.

Table 1. Rating rubric for the quality of ILOs attainment.

Code	Descriptions
Excellent attainment	Critical reflections towards the ILOs, appropriately elaborated, supported by solid evidence from the course materials and/or other sources.
Very good attainment	Good reflections towards the ILOs, with some elaboration, showing good digestion of the course materials.
Good attainment	Some reflections towards the ILOs, with connections to the course materials (e.g. some details of the materials are mentioned).
Fair attainment	Limited reflections towards the ILOs, without elaboration, with a small degree of connection to the course materials (e.g. some vast topics are mentioned).
Poor attainment	Mere repeating the content of the course materials with no reflections.

Table 2. Coding scheme (categories) on intended learning outcome

Code	Descriptions
ILO1	Comprehend and discuss science-related texts
ILO2	Identify the essential characteristics of how human beings view Nature
ILO3	Formulate informed personal views on the societal implications of scientific explorations

| ILO4 | Related the developments in natural sciences highlighted in the course to contemporary human condition |
| ILO5 | Evaluate the scopes of application, achievement and limitations of highlighted scientific methods using multiple perspectives |

Table 3. Coding scheme on cognitive phase.

Category	Indicators
1. Triggering	Recognizing the problem Sense of puzzlement
2. Exploration	Divergence within online community Divergence within single message Information exchange Suggestions for consideration Brainstorming Leaps to conclusions
3. Integration	Convergence among group members Convergence within a single message Connecting ideas, synthesis Creating solutions
4. Solution	Vicarious application to real world Testing solutions Defending solution

Term 1 represents course setting with micro-modules coupled with online discussion, whereas micro-modules and online discussion were introduced separately in term 2. There were 217 and 175 participants in term 1 and term 2 respectively; with 239 and 226 valid online discussion entries in corresponding term (duplicated submissions were eliminated). In table 4, the overall counting of the codes from the content analysis is shown.

ILOs 1-5 are the counts of threads that were coded with a quality rated as "Good attainment" or above by at least one coder. ILOs (by students) is the count of students who had entries with at least one ILO rated as "Good attainment" or above by at least one coder. The corresponding percentages were also included.

In the discussion forum, students' entries usually fall at exploration and integration stage, barely stay at triggering or reach solution stage. In Table 4, both counts by thread and counts by students were presented.

Table 4. Overall results of content analysis (counting and percentage) of the discussion forum threads in 2017-18 Term 1 and 2. (ILO1-5 and ILOs are only counted if one coder rated the quality as Good or above)

	Term 1	Term 2
Micro-modules implementation	Compulsory	Voluntary

Number of participants	216		175	
Number of valid responses	239		226	
ILO1	27	12.50%	39	22.29%
ILO2	105	48.61%	39	22.29%
ILO3	19	8.80%	5	2.86%
ILO4	20	9.26%	9	5.14%
ILO5	78	36.11%	11	6.29%
ILOs (by students)	147	67.74%	66	37.71%
Exploration (by threads)	186	79.50%	191	84.51%
Integration (by threads)	53	22.58%	35	15.49%
Exploration (by students)	168	77.78%	146	83.43%
Integration (by students)	48	22.22%	29	16.57%

Online survey on the effectiveness of compulsory micro-modules, coupled with online discussion forum

In 2016-17 Term 1 and 2017-18 Term 1, an online survey, in a 5-point Likert scale, with respect to the students' perception on micro-modules was conducted. In 2016-17 Term 1, micro-modules were introduced as a supplemental video where students were suggested to watch according to their own needs. In 2017-18 Term 1, students were required to watch the micro-modules before participating in the online discussion forum. The mean scores have been computed and the means were compared by two-tailed t-test (95% confident level).

Table 5. Online survey on students' perception on micro-modules (negative statements were shaded in grey.)

(* Significant difference in two-tailed t-test; confident level 95%)

Max. = 5	2016-17 Term 1 [a]	2017-18 Term 1 [b]	Change in mean	T-test
	N=55	N=81	([b]–[a])	
Watching micro-modules				
reduced my motivation to read the texts.	2.47	2.56	0.09	0.61
increased my understanding on the development of natural science.	4.33	4.69	0.36*	0.00
enhanced my performance in tutorial discussion.	4.11	4.13	0.02	0.91
discouraged me to attend regular lectures.	2.33	2.64	0.32	0.12
enhanced my reflection on the social implications of scientific inquiry.	4.02	4.36	0.34*	0.01
increased my interest in natural science.	4.09	4.39	0.30	0.06

enriched the materials in writing reflective journal/ term paper.	3.78	4.53	0.75*	0.00
discouraged me to discuss with fellow classmates in tutorials.	2.29	2.32	0.03	0.86
enhanced my understanding on the text content.	4.51	4.59	0.08	0.58
allowed me to have more in-depth reflection on the related topics.	4.18	4.61	0.43*	0.00
discouraged me to discuss with UGFN course teacher.	2.46	2.44	-0.02	0.93
increased my understanding on the contributions and limitations of scientific inquiry.	4.15	4.48	0.34*	0.02
enhanced my performance in quiz.	3.69	3.70	0.01	0.96
Overall, I am satisfied with the UGFN micro-modules.	4.44	4.66	0.22	0.12

Appendix 2

Report on students' perception of discussion forum-coupled micro-modules versus face-to-face lecture-tutorial

(i) Cognitive and social presences survey

In the online survey delivered in 2017-18 Term 1, we have inserted paired questions which required participants to state their preferences to both online discussion and tutorial discussion, on a 5-point Likert scale. This illustrates the learners' perception to both pedagogies after experiencing both settings. Table 6 summarizes the mean scores of students' perception towards online discussion and tutorial discussion from each statement.

Table 6. Online survey on cognitive presence and social presence of online discussion and tutorial discussion

(* Significant difference in two-tailed t-test; confident level 95%)

		Online discussion (Mean) [a]	Tutorial discussion (Mean) [b]	Mean difference ([b]-[a])
	N=81; Max. = 5			
Cognitive presence	Problems posed increased my interest in course issues.	3.71	4.21	+0.49*
	Course activities piqued my curiosity.	3.66	4.26	+0.61*
	I felt motivated to explore content related questions.	3.60	4.17	+0.57*
	I utilized a variety of information sources to explore problems posed in this course.	3.67	3.84	+0.17
	Brainstorming and finding relevant information helped me resolve content related questions.	3.69	3.93	+0.24*
	Tutorial discussion/Online discussions were valuable in helping me appreciate different perspectives.	3.90	4.24	+0.34*
	Combining new information helped me answer questions raised in course activities.	3.86	4.13	+0.26*
	Learning activities helped me construct explanations/solutions.	3.77	4.10	+0.33*
	Reflection on course content and discussions helped me understand fundamental concepts in this class.	3.84	4.21	+0.37*
	I have developed solutions to course problems that can be applied in practice.	3.67	4.00	+0.33*
	I can apply the knowledge created in this course to my work or other non-class related activities.	3.39	3.74	+0.34*
Social presence	Getting to know other course participants gave me a sense of belonging in the course.	2.94	3.83	+0.89*
	I was able to form distinct impressions of some course participants.	2.89	3.90	+1.01*
	Face-to-face communication/Online or web-based communication is an excellent way for social interaction.	3.11	4.25	+1.14*
	I felt comfortable conversing face to face/through online medium.	3.62	4.06	+0.44*
	I felt comfortable participating in the course discussions	3.55	4.09	+0.54*
	I felt comfortable interacting with other course participants	3.49	4.03	+0.54*
	I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	3.45	3.97	+0.52*
	I felt that my point of view was acknowledged by other course participants.	3.66	4.10	+0.45*
	Face-to-face discussions/Online discussions help me to develop a sense of collaboration.	3.11	3.99	+0.87*

(ii) Focus group studies

We have invited 16 students to join the focus group interviews in 2017-18 Term 1. They were divided into 4 groups (2-5 students per group). They were asked to comment on the micro-modules coupled with discussion forum and compare it with the face-to-face lecture-tutorial learning. In this part, we summarized their reaction to the others' opinions in both pedagogical settings and the advantages and benefits of each setting. Sample quotes were put in the following parts.

(The number of participants with same category of claim is displayed in bracket.)

Reaction to the others
1. Face-to-face lecture-tutorial
    a. Integrate others responses with own stance/ thoughts/ belief (5)
    "I often have slight changes to my own thoughts after listening to the others. [At the beginning of the discussion,] I usually have a clear stance after listening to a discussion question. However, I found that others with opposite stance could always make sound arguments during the discussion. During the interaction, we could generate a conclusion together, which is usually more comprehensive and well-rounded." (Medicine, Year 1, A71)
    b. Allow for multiple stances to exist in a group (3)
    "If we have two extremely opposite stances towards a discussion question in the group, like once we discussed a question about "Feng Shui", [when reporting what we had discussed] we simply presented both the stances and the corresponding arguments." (International Business and Chinese Enterprise, Year 2, B92)
    c. Avoid Argument (5)
    "Some people are so aggressive that they speak a lot. And I am not sure whether I am right or not so I seldom talk [and oppose the others]." (Translation, Year 3, C88)
    d. Add on to others' opinions (2)
    "…I would listen to the others if someone expresses his/her opinions first. I would see whether my opinions differ from or contradict with his/hers. If so, I would add on his/her opinions or raise my own opinions afterwards…" (Chinese Language and Literature, Year 2, A62)
    e. Avoid repeating the others' opinions (1)
    "After listening to the others, [I] found that their opinions were more or less the same with mine, so I think I don't need to present that opinion again." (Integrated BBA, Year 2, D159)
    f. Argue with the others when having different opinions (1)
    "In class, [lecturer] raised a question. We would argue with each other. Say, student

A may discover something, student B may think that it was incorrect and speak against him/her. [Lecturer] would raise questions to guide their discussion." (Science, Year 2, C90)

2. Discussion forum

   a. Add on to others' replies (5)

   "I read the comments and see if there is any deficiency throughout the arguments. Say, if one did not raise any evidence but solely express his/her own personal view, I would add on with reference to support myself…" (Geography and Resource Management, Year 1, B162)

   b. Challenge others' stance (4)

   "I would pick those responses that I disagree to. [When doing the discussion forum], I had read through all the other responses and try to argue with their points. I replied to one that I had sufficient arguments to go against. I think that opposing the others was easier [to write] than agreeing to the others because I may repeat what has been said if I reply to someone who share the same stance with me." (International Business and Chinese Enterprise, Year 2, B159)

   c. Not changing his/ her own thoughts (3)

   "I observed how the others responded on the issue, but I would insist on my original stance. I think it is a platform to express my opinions. There's no absolute right or wrong." (Science, Year 2, C131)

   d. Avoid reading/repeating the others' contents (3)

   "I did not read the others' replies. I only focus on my own response… because I don't want it to be like I am copying from the others." (Integrated BBA, Year 2, D231)

   e. Get a sense of the length of the replies (3)

   "I first looked the length of others' posts… I chose to reply to the topic where the others only made short replies. I had more chance to stand out in those discussion topics." (Integrated BBA, Year 2, D227)

   f. Integrate others' responses with own stance/ thoughts/ belief (1)

   "…I would add my points based on the others, elaborate in details and if I had time, I would integrate them to establish a new point of view…" (Psychology, Year 2, A192)

Advantages and benefits

1. Face-to-face lecture-tutorial

   a. Learning effectiveness

      i. Reflecting on their own life (10)

         "In that lesson about Plato's Allegory of the Cave, my lecturer asked us 'which position university students were at in the Allegory, whether we were imprisoned or stepping out the cave'. We raised lots of different opinions during discussion. I kept thinking of the question after class…"

(Chinese Language and Literature, Year 2, A93)

    ii.   Gaining new insights (8)

"I think tutorial discussion was one of the reasons that I like UGFN1000… when the others in the class express themselves from different perspectives, I was inspired to think from different angles, dig deeper in the course issue." (Science, Year 2, C100)

    iii.   Filling in the missing part of their own thoughts (3)

"In the tutorial discussion, lecturer explained the discussed issues or elaborated the missed part. We could know more about the main ideas of the text." (Integrated BBA, Year 2, D171)

    iv.   Becoming more open-minded to different ideas and thoughts (2)

"I begin to think that there might be justification behind many issues. I was once so against Chinese medicine, that it doesn't make sense to me. After the tutorial, I feel that it becomes less absurd to me." (International Business and Chinese Enterprise, Year 2, B120)

    v.   Understanding the arguments in the reading (2)

"Tutorial discussion could deepen our thoughts. I may not recognize the value of the texts after reading through the passages. However, from the discussion, I could get inspiration and thus understand the main ideas." (Chinese Language and Literature, Year 2, D183)

b. Advantages

    i.   More interactive comparing to discussion forum (8)

"When I express my opinions in tutorial, someone may correct me, someone may agree with me, lecturer may make instant responses and give us his/ her ideas. This discussion was more effective [compare to discussion forum]." (Chinese Language and Literature, Year 2, D319)

    ii.   Instant responses from classmates (5)

"In a face-to-face discussion, when you reply the others, he/she could give you simultaneous responses. This is more intense." (Medicine, Year 1, A229)

    iii.   Instructors' feedback and explanation (11)

"We could hear ideas from the lecturer during conversation in tutorial, and thus may generate some new points of view." (Statistics, Year 2, A239)

    iv.   Oral presentation is clearer in delivering the message (4)

"I think that we could describe the details by oral conversation…while turning into words make the conversation more complicated and less clear." (International Business and Chinese Enterprise, Year 2, B210)

2. <u>Discussion forum</u>

a. Learning effectiveness

i. Deepen understanding after watch micro-modules or participating in online discussion (7)

"After finishing the assignment [online discussion], I had gained a deeper understanding to that issue… because I did research regarding the issue and gained a better interest to the topic… I would discuss the topic with my friends during leisure time." (Chinese Language and Literature, Year 2, A196)

ii. Clarify own thoughts (6)

"What I wrote in my response was my original belief. Writing them down tidies up my own thought but I may not have a deeper reflection [by doing the discussion forum]." (Medicine, Year 1, A197)

iii. No change to own thoughts (5)

"I inclined to believe in free will. After reading others' responses and read the assigned reading again, I feel that both of them could not persuade me to decline free will." (Social Work, Year 2, A205)

iv. Chance to voice out his/her own view, which s/he did not have a chance to present in class (2)

"I made my reply to express some ideas that I did not have a chance to present in tutorial discussion." (Information Engineering, Year 1, B183)

b. Advantages

i. Messages could be more complete or organized (6)

In an online discussion, I have more time to clarify my own thoughts. My expression could be more compelling. In tutorial discussion, my points were less organized. (Integrated BBA, Year 2, D323)

ii. Written words are easier to be handled for some students (3)

"I seldom speak [in a tutorial setting]. I think online discussion gave me an opportunity to elaborate my opinions, so I prefer it more." (Translation, Year 3, C186)

iii. More rich in content and examples (2)

"My brain could not function well [in a tutorial] where I need to make instant responses. I am the one who needs time to do research and finds evidence to support my stance." (Chinese Language and Literature, Year 2, A231)

iv. Less stressed comparing to tutorial discussion (2)

"[If I] freely express myself, the whole class would know that I made a wrong statement. Privacy was higher in an online platform." (Integrated BBA, Year 2, D306)