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BUILDING COMPETENCY BASED LEARNING MODEL FOR DISTANCE EDUCATION IN POST COVID19 ERA: A CASE STUDY IN UNIVERSITAS TERBUKA

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Abstract

This paper presents the efforts made by a Team at Universitas Terbuka (UT) to provide optimal learning support services to students piloted on Management Information Systems (MIS) course offered in the Economics Education study program. Students in the open and distance education (ODE) system are required to implement self-directed learning. At the same time, ODE institutions are required to provide facilities needed by the students, one of which is providing learning support services for students. As an ODE institution, UT provides various forms of learning support services to students, including tutorial. Basically, there are two types of tutorials, face-to-face and online. During the COVID 19 Pandemic, due to limitation of physical contact, UT provided webinar tutorial to replace face-to-face tutorial. Tutorials online (tuton) are conducted asynchronously in a period of 8 consecutive weeks of each semester. The materials on tuton are basically an additional explanation of the materials discussed in the modules, topics for discussions, and assignments. Students are expected to log in to the tuton at least once a week to learn the material, participate in discussion, and on certain weeks work on and upload assignment. To provide optimal learning support services, synchronous discussions and augmented reality (AR) programs were added on tuton of MIS course in second semester of 2021 and first semester of 2022. The synchronous meetings provided opportunities for students to discuss topics with tutors and specially invited speakers. The AR programs were added to enrich students' learning experiences. However, students' response to these facilities have not been encouraging yet. Not many students were logged in in the discussions and AR programs have not attracted many discussions. Nevertheless, based on inputs from students, improvements were made to assemble this form of learning support service in order to improve quality of student learning support services.

Keywords: synchronous learning, asynchronous Learning, students learning support service.

1 INTRODUCTION

The development of the industrial world requires people to have abilities known as 4Cs (Critical thinking, Communication, Collaboration, and Creative) in all domains (knowledge, skills, and attitudes). For this reason, the world of education needs to anticipate this need by providing educational content and processes that are able to equip students and graduates with the ability of 4 Cs. The problem is, since the beginning of 2020 the Covid 19 pandemic, has forced the world of education to take advantage of information and communication technology (ICT) due to

restrictions on face-to-face meetings. Distance education system (ODL) or e-learning is booming because this system can be applied to the conditions of the Covid 19 pandemic.

On the other hand, the question arises to what extent can ODL/e-leaning facilitate students' need for 4Cs in three competency aspects: knowledge, skills, and attitudes. Research in the 4C area on ODL is only at an early stage. Competency Based Learning (CBL) has not been widely studied in relation to the increase in 4Cs of students.

In addition, research that links CBL with learning outcomes and student needs has not been widely carried out. Some of the CBL research conducted has generally focused on knowledge. There is no CBL Model yet to optimize 4Cs. The absence of a CBL Model which is related to the ability of students in 4Cs may result in the inability to fulfill the work tenage requirements to be absorbed by the industrial world. In addition, the inability to participate in 4Cs will also result in the inability of students to survive in the new era of life after the Covid Pandemic. Therefore, this Study aims to develop CBL Model, specifically in the distance education system, that can produce students/graduates who have 4Cs which in turn preparing them for the world of work in the post-Covid 19 era.

The theoretical framework of this Study is depicted in Diagram 1. While focusing on the learning process of a student where students actually engage in learning, this Study also takes comprehensive approach to learning to also include student's background and student's achievement.

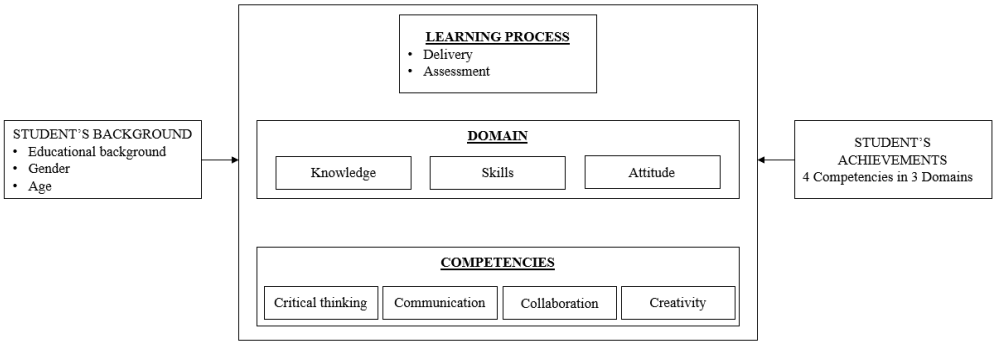

Diagram 1. Learning process

2 METHODOLOGY

This Research used qualitative using portfolio and content analysis will be used to measure changes in 3 domains for 4 competencies. The complete approach is displayed in Table 1. A

comprehensive method of the Research (data needed, data collection, instruments, and data analysis) can be viewed in Table 1. It is decided that the learning Model is take a form of Tutorial Online (Tuton) which currently employed at UT using asynchronous approach. The Model which is developed in this Research is mixing asynchronous approach using in Tuton with synchronous approach currently using di Tutorial Webinar (Tuweb).

Steps in the research is depicted in Diagram 2.

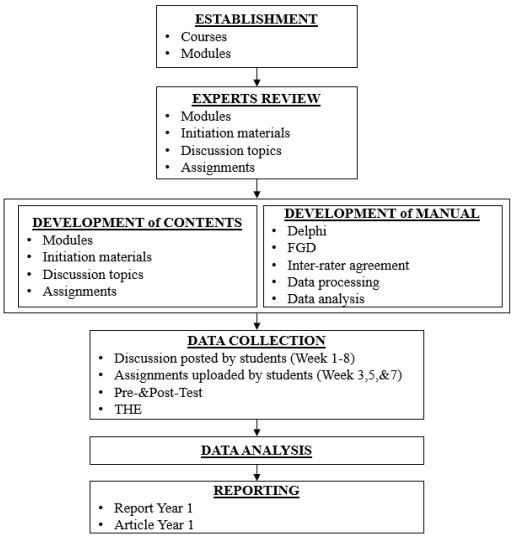

Diagram 2. Steps in the Research

Table 1. Steps, Activities, and Results

Steps	Activities	Results	Notes
			Establishment of:
• Courses	Discussion in Team to decide whichcourse will be used in the Research	Name of coursechosen: SIM &Pengambilan Keputusan (MIS & Decisionmaking process)	Course code: PKOP4422
• Modules	2 Cycles Delphi with 4 experts Deciding indicators in 3 domains for 4competencies for the course chosen	Indicators for 3 domain in 4 competencies Attachment 2	Using Guideline for Delphi developed by the Team (Table 2)
	2 Cycles Delphi with 4 experts Deciding which (3-5) modules from thechosen course could be used in the Research based on indicatorsnecessary	3-5 modules chosen Attachment 2	
	Experts review Reviewing the (3-5) modules to be usedin the Research according to indicators required	Input to completing the (3-5) modules chosen based on the indicators Attachment 3	Using Table prepared by The Team

Steps	Activities	Results	Notes
	Experts Completing (3-5) modules to be used inthe Research based on results of experts review	The (3-5) modules are ready to use in learning process (Tuton) Attachment 4	
			Development of content:
• Initiation materials (8 set)	Expert write and review 8 initiation materials in Tuton for chosen course relevant to 3 Ds in 4 Cs	8 Initiation materials relevant to 3 Ds in 4Cs Attachment 4	Based on indicators developed by experts
• Discussion topics (8 set)	Expert write and review 8 discussiontopics in Tuton for chosen course relevant to 3 Ds in 4 Cs	8 Discussion topics relevant to 3 Ds in 4Cs Attachment 5	
• Assignments (3set)	Expert write and review 3 assignment in Tuton for chosen course relevant to 3 Dsin 4 Cs	3 Assignments relevant to 3 Ds in 4 Cs Attachment 6	
• Conducting livediscussion	Discussion with expert (synchronous)		
			Development of guideline/guidance:
• Delphi	Team develops guideline for (2-cycles) Delphi technique	Delphi Guidelines Attachment 7	

Table 2. Indicators for Each Competency to be Used in Delphi with Experts

No.	DOMAIN	INDICATORS for COMPETENCY			
		CRITICAL THINKING	COMMUNI-CATION	COLLABO-RATION	CREATIVITY
	A set of demonstrable characteristics and skills that enable, and improve the efficiency or performance of a job.	Self-guided, self-disciplined thinking which attempts to reason at the highest level of quality in a fair-minded way. (Linda Elder, September, 2007)	A process of exchanging ideas, thoughts, knowledge and information such that the purpose or intention is fulfilled in the best possible manner (November 7, 2018 by Prachi M)	The action of working with someone to produce or create something.	Involves generating and applying ideas to create something of values. Students recognize opportunities to apply ideas in new ways. They are open to and play with ideas, take risks, andadapt to changing conditions. Students demonstrate optimism, initiative, and ingenuity
1	KNOWLEDGE	….	….	….	….
2	SKILLS	….	….	….	….
3	ATTITUDE	….	….	….	….

3 FINDINGS AND DISCUSSION

The Learning Model for this Research is a combination of synchronous and asynchronous learning. These two learning modes are important for ODL student due to the ability to provide interaction required in learning yet make it possible for ODL learning with flexibility. Meanwhile, basic model for the offered Model is Tuton.

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Vol 3 2022

Katalog Ut (2021) describes tuton as a mode of learning support system provided by UT to facilitate students in their study. Tuton run for eight weeks where students discuss one topic for each week, hence a total of eight topics chosen from the modules. These topics function as triggers for students to initiate learning, making them known as initiation materials. Apart from reading or learning initiation material, students will also get point if they actively engage in discussion(s) or if they submit assignments. There are three assignments in total for the whole duration of tuton.

All materials are prepared prior to tutor time and communication is conducted asynchronously. Students can post their opinion about certain topics and other students or tutor will response to it later. Both tutor and students are given log in names and passwords to log in in tuton. Students and tutors have assigned to specific class(es). UT provides manual on how to utilize tuton. It depends on the students how they want to utilize learning support services UT provided.

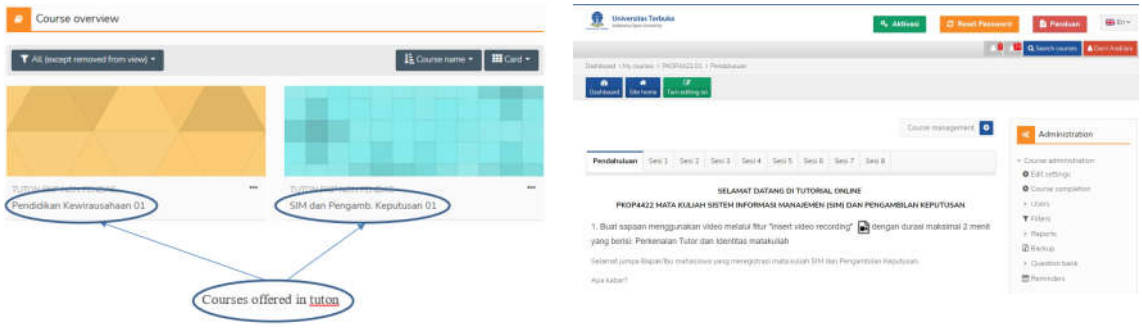


Figure 1.

Once students succeed in logging in to tuton class, they will find this page where information on the class is provided. Now students could click “Sesi 1” (Session1) where they are informed the date for the session. Different from first page, in each session, students are asked to fill out a presence report to indicate that their log in in certain week.

Figure 2.

In every session, students can find initiation material (“MATERI INISIASI”) and topic to be discussed (“DIKUSI”).

e-ISSN 2963-2870
Vol 3 2022

Figure 3.

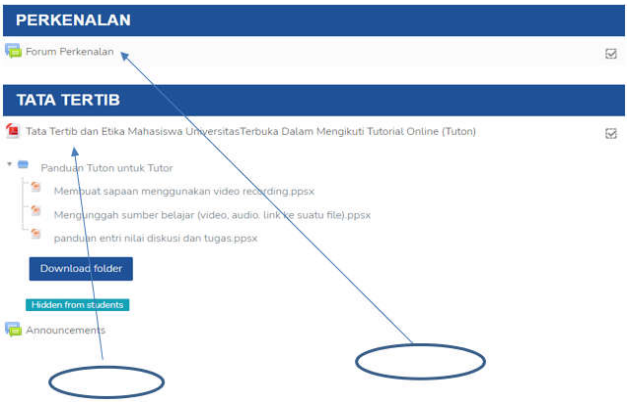


Figure 4.

At the same time, in this pandemic situation, UT has tutorial webinar (tuweb) where students sit together synchronously with tutor via TEAMS. They can discuss schedule topics while at the same time take a look at their assignments.

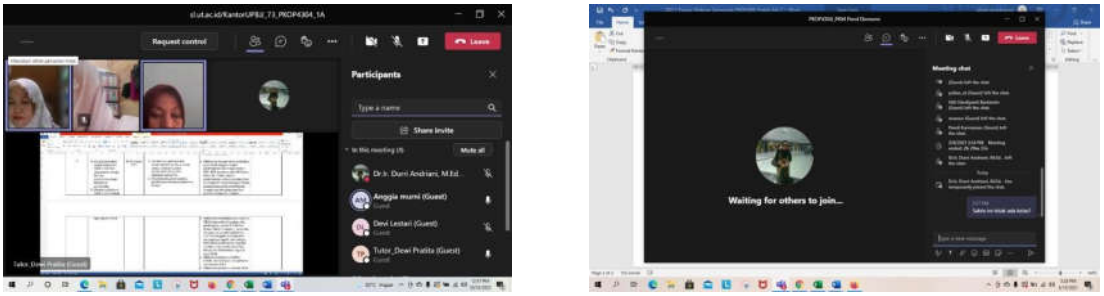
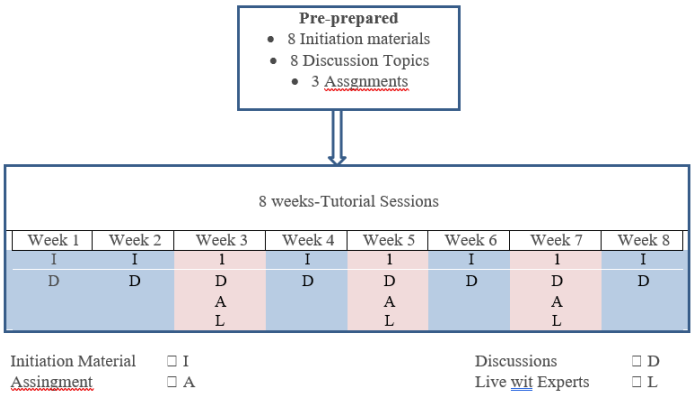


Figure 5.

However, tuweb is not free from constraints. For some areas where internet is a luxury, it could happen that tuweb class delayed 30 minutes or even an hour due to internet bad connection.

The plus and minus of tuton and tuweb is facts. The Team takes the plus of these two approaches and put it into **TUTON+** where students get the benefit of learning from a pre- prepared materials and at the same time have opportunities to meet experts live.

*Diagram 3. **TUTON+** framework*



Here are steps to develop materials for **TUTON+**:

a. Development of guideline/guidance:

Because of the pandemic situation, it is decided that communication with experts is done through media, Internet that is. In order to optimally gain benefit from experts, in this pandemic situation, Delphi Technique is used. This technique enables the Team to gain most of the expert thinking since they are asked to provide the Team with insight on issues being researched. The Team then put together the experts' individual inputs and share the results to the experts to be further analyzed. Results of this Two-Cycle of Delphi Technique are significant to develop the Learning Model.

b. Deciding course to be developed

First step in developing The Learning Model is to choose which course should be used as a pilot. The experts agreed that the chosen course should pass this requirement.

- The course should have impact on industrial era
- Nature of the course should provide enough room for implementing 4Cs. While all of the courses offered should provide enough rooms for 4Cs, it could happen that some courses have no room for 4Cs.
- The course has already tuton in place. This is to make sure that the pilot could be conducted.
- The course has enough students that the tuton is running
- Tutor for the course has to be one of Team member

Team decided to choose "SIM & Pengambilan Keputusan" (MIS & Decision making Process) course. The course is one courses offered in Economics Education in Economics Education Study Program.

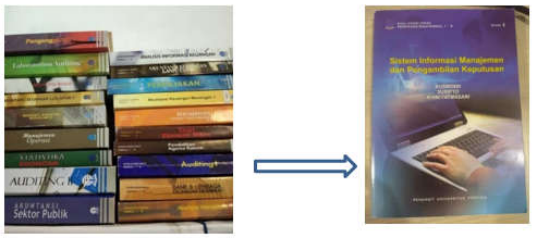


Figure 6.

c. Mapping for 3 domains in 4 competencies

Using Guideline for Delphi developed by the Team (Table 2), four experts, three form Universitas negeri Jakarta (UNJ) and 0ne former head of Economics Education Study Program at Universitas Terbuka, mapped indicators for the domain in 4Cs.

Table 3. Set of indicators explaining competencies in each domain is resulted from Two-Cycle

No	DOMAIN PENDIDIKAN	INDICATOR OF COMPETENCIES							
		CRITICAL THINKING		COMMUNICATION		COLLABORATION		CREATIVITY	
		1		2		3		4	
	mahasiswa mampu:								
1	KNOWLEDGE	1	menyampaikan materi yang benar	1	memilih diksi sesuai topik dan bidang ilmu	1	menangkap peluang untuk bekerjasama dalam mencapai tujuan dengan cepat	1	membandingkan kebenaran materi dengan tepat
		2	memberikan gambaran keadaan suatu masalah dengan benar	2	mengemukakan pendapat dengan jelas atas sebuah masalah berdasarkan teori yang relevan	2	bekerja sama untuk menyelesaikan suatu pekerjaan dengan efektif	2	menciptakan sesuatu yang baru yang bermanfaat
	mahasiswa terampil:								
2	SKILLS	1	mengevaluasi kinerja dan hasil belajarnya dengan kritis	1	mengartikulasikan pikiran dan ide menggunakan beragam mode komunikasi (lisan, tertulis dan nonverbal) secara efektif	1	memaknai aktivitas setiap orang di dalam kelompok untuk mendapatkan hasil optimal	1	mendemontrasikan gagasan atau aktifitas dengan benar
		2	merefleksikan kinerja dan hasil belajarnya dengan kritis	2	mengungkapkan pendapat, kritik, dan gagasan yang dimengerti pihak lain dengan efektif	2	membagi peran sesuai kemampuan serta kebutuhan kelompok dengan tepat	2	membuat kebaruan gagasan yang solutif

	mahasiswa berikan:								
3	ATTITUDE	1	sopan dan santun dalam menyampaikan gagasan sesuai bidang ilmu	1	asertif dalam sikap dan gerak tubuh pada saat berkomunikasi melalui media apapun	1	positif dalam pengerjan tugas kelompok	1	terbuka dalam melihat hal baru dan pandangan yang berbeda
		2	komprehensif dalam memandang materi, masalah dan solusi yang dilihat dari berbagai sudut pandang yang berbeda	2	antusias, spontan, dan berani mengungkapkan pendapat berdasarkan data dan didasari ilmu yang relavan	2	penuh komitmen untuk mengikuti pedoman kerja kelompok dan berorientasi untuk mencapai tujuan kelompok	2	responsif dalam melihat hal baru dan pandangan yang berbeda

d. Deciding which (3-5) modules from the chosen course

Experts and Team finally decide to develop materials for Tutons (see Table 4). The topics were weighed to its significance in term of achieving 4Cs targeted to be possessed by students by the end of the semester. Notwithstanding, it is risky to put pressures only in one course to make students have 4Cs. Nevertheless, in research setting where assumption is taken, the Team decide to go for developing the Model to be pilot in 2022.

Some of the "new" topics require a more engagement from students in order from them to have full advantages from it. The engagement, for example, force students to participate more actively in discussion or go finding learning resources to library or googling the Internet. I order to doing these, students must have some prerequisite competencies which UT have limited data on it. Therefore, in piloting the Model, close supervision will be conducted.

Table 4. Eight Chosen Topics based on 4Cs mapping

NO.	MODULe	Learning Activities (TOPIcs)*	Comptence/DOMAIN**												Tentative Title***	Assignment
			Critical Thinking			*Communi-cation*			*Collaboration*			*Creativity*				
			K	S	A	K	S	A	K	S	A	K	S	A		
1	Konsep Dasar Sistem Informasi	1. Pengertian Sostem Infoamsi	1, 3, 4, 5, 8,	2, 8, 9, 15, 17,	3, 4, 7,	2, 3, 6,	3, 4, 9,	2, 3, 4,	8, 11, 18	5, 8, 16,	1, 4, 6,	1, 4, 5, 10,	1, 4, 6,	1, 2, 3, 15	Sistem Informasi 4.0	1
2	Sostem Pendudkung {pengambilan Keputusan	2. Pendukung Pengambilan Keputusan	2, 5, 6,	3, 4, 8, 9, 15	2, 11, 13	2, 3, 7, 12	2, 4, 6 9,	2, 8, 13, 15,	4, 8, 10, 16, 18	2, 3, 4, 14	2, 3, 4, 5, 10, 13	1, 3, 4, 5, 7, 8, 10	4, 10, 11, 14, 15,	1, 2, 7, 13, 15	Sistem Pendukung Keputusan	
3	Keputusan Berdasarkan SIM	2. Penegmbailan Keputisan Berdasarkan	1, 2, 9,	2, 3, 4, 8, 9, 11, 13,	2, 3, 10, 11, 14,	2, 3, 4, 7,	1, 2, 3, 5,	4, 10, 11, 14,	3, 4, 5, 6, 11,	1, 2, 3, 4, 14,	3, 10, 11, 14,	1, 5,	10, 18,	3, 6, 7, 8,	Pengambilan Keputusan Disekolah Selama	

		SIM													Pandemi	
4	Pengembangan SI	1. Mpdel Pengembangan Siostem	1, 2, 7	4, 9	2, 3	2, 3, 7	2, 3, 5	4	4, 6, 11	1, 2, 4, 5	3	1, 3, 5	10, 18	1, 2, 3	Model Model Pengembangan Sistem	2
6	Dampak Etika & Sosial Pe,mnafaatan Sistem Informasi	2. Etika dalam Suatu Masyarakat Informasi	1, 2, 7, 9, 14,	4, 8, 9, 10,	2, 3, 10, 11, 14,	2, 3, 7,	2, 3, 5,	4, 10, 11, 14	4, 6, 11,	1, 2, 4, 5	3, 10, 11, 14,	1, 3, 5, 10,	7, 8, 9, 10, 18,	1, 2, 3,	Permasalahan/ Kasus Etika dalam pengambilan keputusan	
7	Pengembangan SIM di Sekolah	2. Implementasi SIM di Sekolah	1, 2, 9	4, 8, 9, 13	2, 3	2, 3, 7	2, 3, 5	4	4, 6, 11	1, 2, 4	3	1, 5	10, 18	3	Implementasi Sistem Informasi Manajemen Di Sekolah	3
8	Pemanaafaatan TIK dalam Pendidikan	1. Pemanfaatan TIK sebagai Media Pembelajaran	1, 3, 4, 5,	9, 10, 11, 17, 18,	3, 4, 7	2, 3, 6	4, 9	2, 3, 4	2, 6, 7,	1, 2, 5,	10, 11, 14,	1, 2, 5, 6, 10,	1, 4, 6,	1, 3, 11, 12, 13,	Pemanfaatan TIK sbg Media Pembelajaran yang Efektif	

e. Development of content

Four experts are invited to review the quality of current PKOP4422 modules and its fulfillment to the 4Cs. Based on the results, several enrichments are done to perfect the modules. The enrichments come in four forms, as follows.

- Adding Initiation materials (8 set)

  Experts write and review 8 initiation materials in Tuton for chosen course relevant to 3 Ds in 4 Cs (Attachment 4). As a common situation, topics in modules are viewed outdate, hence the need to be updated. Moreover, examples and exercise in the modules is believed not to encouragement students to possess 4cs. Consequently, the initiation material then enriched:

  - Updated material
  - Examples that could motivate students to have 4Cs
  - Presented in a more interesting form

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Vol 3 2022

- Discussion topics (8 set)

  Experts saw that discussion provided in the Tuton has not force students to build their collaborative competencies since approach used in the Discussion Forum are individual. Therefore, aside from adding topping of discussion to be more updated, the approach to the discussion is also changed. In two out of eight discussions in Tuton create to make students exercise their ability to collaborate and communicate effectively with other students.

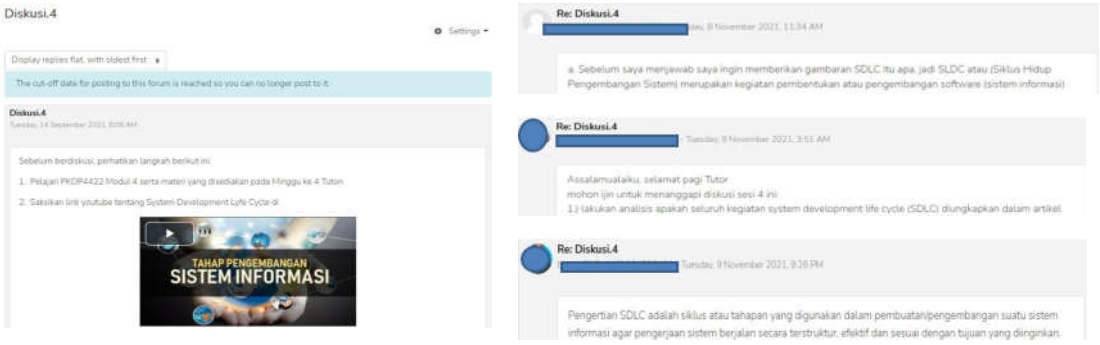

Figure 7.

However, students have not taken full advantage of the discussions, they seem to enjoy thinking for themselves and pass the opportunity to have discussion with their friend.

- Assignments (3 set)

  Notwithstanding, assignments in the Tuton have not yet shown their capability to assess students' 4Cs. The four experts then develop assignment based on materials they develop in initiation materials and exercise in Discussions.

e-ISSN 2963-2870
Vol 3 2022

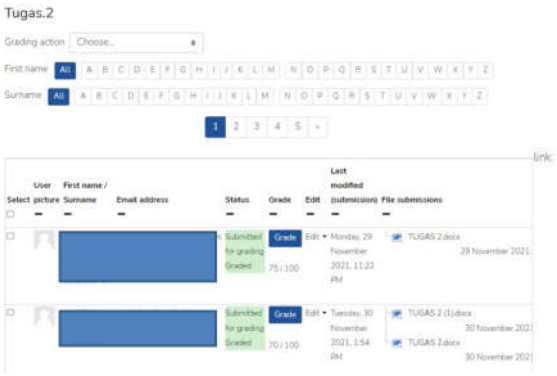

Figure 8.

- Conducting live discussion (3 times)

  To provide synchronous learning in Tuton, this research conducts live discussion with experts. Tutor acted as moderator and students who is invited a week before, are encouraged to participate in the discussions. It is not mandatory for students to attend the discussions, but tutor is sure explain positive results if students join the live discussion. For students who can not join the live discussion, they can still watch the discussion since the discussion are recorded and the recordings are posted in the Tuton.

4 CONCLUSION

There are four points worth to research, namely:

- In order to facilitate students to have 4Cs, there is a need to evaluate learning model employed in UT. Tuton and Tuweb in UT each has pluses and minuses.
- Developing learning model to provide students with wider opportunities to poses 4Cs can be done using facilities already exist at UT
- It is proposed that UT develop a mixed asynchronous & synchronous learning model called **TUTON+**
- Experts play significant roles in developing materials needed for the proposed model.

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