Scientific Approach-Based English Learning Strategy in Online Learning: Learners' Satisfaction and Obstacles

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A B S T R A C T

This research investigated the application of Scientific Approach-Based English Learning Strategy (SABELS) in online learning for higher education level. Twenty items of closed-ended questionnaire were designed to indicate learners' satisfaction and one item of open-ended questionnaire was to list some obstacles during online learning. The sample of this research was 215 learners who contracted Curriculum and Material Development (CMD) course in the fifth semester. It was found that the respondents were very satisfied towards the application of this strategy in online course. Some problems encountered by learners were unstable internet network, frequent power outage, slow response by lecturer in chatting, time consumption during online team work, and lack of motivation in self-learning. In conclusion, this new strategy has encouraged learners to do collaborative, research-based, and character building-based learning. Further study is suggested especially on investigating its effectiveness through experimental research.

A R T I C L E   I N F O

1.   Introduction

The presence of internet technology has changed the function of schools, which previously served as face-to-face places to get information, now it must become a place to manage the information obtained from online technology and apply it (Handelsman, Miller, & Pfund, 2007; Ebert-May & Hodder, 2008). In line with these changes, approaches and methods must also change from face-to-face to online. Several studies proved that using online systems in learning can improve students' academic performances and also develop attitudes (Grabe & Christopherson, 2008; McFarlin, 2008; Foertsch, Moses, Strikwerda, & Litzkow, 2002; Prunuske, Batzli, Howell, & Miller, 2012).

In Indonesia, online lecture is not a new term. The government has advocated an online lecture model in higher education through Indonesian National Qualifications Framework. However, since the outbreak of the Covid-19 pandemic in early February 2020 in Indonesia, online learning has become a policy and increasingly used to prevent face-to-face (on-site) meeting.

This policy is also adopted by University of HKBP Nommensen Pematangsiantar (or UHKBPNP for short). Learning process and other academic activities should be done by synchronous (real time or based on class schedule) or asynchronous (flexible in time) e-learning model. It is not only because of the pandemic situation, but also to accelerate the realization of UHKBPNP vision "to become a superior and competitive university at the global level based on information technology (online) towards a sustainable industrial generation based on love for God and country (*Pro Deo et Patria*)", which indicates the community should be competent in utilizing various online technologies to acquire and produce knowledge.

Based on researchers' interview with learners through zoom video conference in February 2021, it was found that many lecturers were not creative in carrying out online lectures so that the level of student understanding of the material was very low. In addition, the lack of interaction between lecturers and students during online lectures causes students to feel that they are no longer part of the academic community.

As solution to this gap, the researcher implemented scientific approach-based English learning strategy (SABELS) in online learning and investigated the students' satisfaction and obstacles during the implementation of this strategy. In previous research, Napitupulu, Manalu, and Siahaan (2019) found that

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SABELS can foster creativity and innovation for both teachers and learners by prioritizing curiosity and willingness to learn. Moreover, it requires the use of enhanced technology (i.e. smartphone) to help students explore and formulate knowledge.

1.1 Online Learning

Online learning, also referred to as e-learning or electronic learning, can be defined as a way of acquiring and producing knowledge, not limited by time and place, through the use of internet. The main character of online learning that distinguished it to on-site learning is its time and place flexibility. As Alqahtani and Rajkhan (2020) stated that the flexibility of e-learning is a solution for people's commitments to their family or work, which may increase the number of people who enrol in this type of education.

Common tools used famously in online learning are among other things video conference, Google Classroom, social media (including Facebook, Instagram, WhatsApp, and other online application), and websites. Some of those tools need to be paid in order to get more sophisticated features and services. An online learning can be designed in two ways: synchronously or asynchronously (Shahabadi & Uplane, 2015). Their difference lies on time of action. Synchronous e-learning is thoroughly held in real-time and live (based on schedule), meanwhile asynchronous e-learning is more flexible in time which gives learners chance to access course at convenient time.

Bonk and King (as cited in Bonk, Wisher and Lee, 2004, p. 70) listed 10 benefits of using online learning, namely: (1) low participants and shy students sometimes open up; (2) there are minimal off-task behaviours; (3) delayed collaboration is more extensive and rich than real time; real time is more immediate and personal; (4) students can generate tons of information or case situations on the Web; (5) minimal student disruptions and dominance; (6) students are excited to publish work; (7) many forms of online advice are available. Practitioner, expert, instructor and student online feedback are all valuable and important; (8) with the permanence of online forum postings, one can print out discussions and perform retrospective analyses and other reflective activities; (9) discussion extends across the semester and creates opportunities to share perspectives beyond a particular course or module; and (10) e-learning encourages instructors to coach and guide learning. All these benefits fit with the characteristics of SABELS implementation.

Related to student satisfaction with online learning, survey research by Surahman and Sulthoni (2020), which involved 224 undergraduate students from 26 universities (state and private) around Indonesia as respondents, found that 60% of them were satisfied and 40% were dissatisfied with online learning services in higher education. Reasons for dissatisfaction included factors of limited access, instability of the management system learning network used, unclear material and assignments from lecturers, low patterns of guidance from lecturers, and lack of constructive feedback on student work.

Ghaderizefreh and Hoover (2018) indicated that the quality of course led to increased students' satisfaction with online learning experience. They suggested in designing online course, educators should consider some factors such as: technical problems, sense of isolation, and lack of social support which will grow students' negative emotions (anxiety, anger, and boredom).

1.2 Design of SABELS in Online Learning

Napitupulu, Manalu, and Siahaan (2019) emphasized that SABELS was established as an alternative solution for language teachers to the implementation of 2013 curriculum in Indonesia. In its implementation, SABELS requires educators to be creative and innovative in organizing learning so that the integration of the knowledge, skills and attitudes of students can be achieved. The use of online technology is needed in extracting large information related to subject matter so that students can form their own knowledge. The roles of teacher and learners are mutually sustainable in achieving learning outcomes as described in figure 1 below.
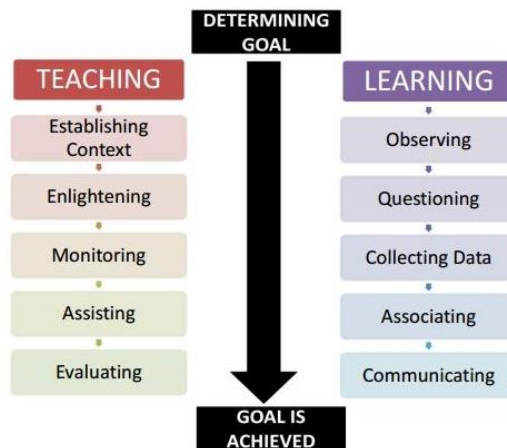
Figure 1. Teaching and Learning Process in SABELS

Teaching and learning activities in this research were designed based on Figure 1 as in table below:

Table 1. Design of SABELS in CMD Online Course

Phase	Lecturer Activities	Students Activities	Model	Media
I	Establishing Context (14 meetings): Sharing lesson plan, materials, references, tasks, and rubric.	Observing: Reading the materials and task posted in SPADA	Asynchronous e-learning	Website: https://spada.uhnp.ac.id/
II	Enlightening: 1. Explaining the material briefly 2. Explaining instruction of task clearly. 3. Setting students' group work (consist of 4 – 5 students for each group).	Questioning: 1. Posing questions related to explanation on materials and task. 2. Giving argument or opinion towards materials or task.	Synchronous e-learning	ZOOM video conference
III	Monitoring: 1. Creating WhatsApp Group. 2. Asking group work progress through WhatsApp Group chat.	Collecting: 1. Reading references provided in SPADA 2. Looking for other references (books, journals, or website) 3. Selecting relevant information.	Asynchronous e-learning	WhatsApp and Website: https://spada.uhnp.ac.id/
IV	Assisting: Giving consultation and discussion through WhatsApp (group chat or video call group)	Associating: 1. Formulating results 2. Designing product of learning (based on task format)	Asynchronous e-learning	WhatsApp
V	Evaluating: 1. Assessing students' work 2. Giving feedback to students' work 3. Drawing conclusion	Communicating: 1. Reporting product of learning 2. Doing peer assessment (constructive criticism) 3. Revising product 4. Submitting product to SPADA	Asynchronous e-learning	WhatsApp and Website: https://spada.uhnp.ac.id/

1.3 Learning Outcomes

Learning outcomes can be generalized as what learner understands and is able to do after completing a course. Ministry of Education and Culture of Indonesia through Directorate General of Higher Education (2020) decided learning outcomes in higher education level should include 4 competencies, namely: (1) attitudes which refer to any positive characters internalized in religious and social life of the learners resulted from the learning program; (2) knowledge which refers to mastery on the theory of a course acquired through scientific process or experience of work or in social life; (3) general skills which refer to any skills which learners must have to

ensure the equality of learners' competencies in higher education level; and (4) specific skills which refer to skills based on the expertise of the learners.
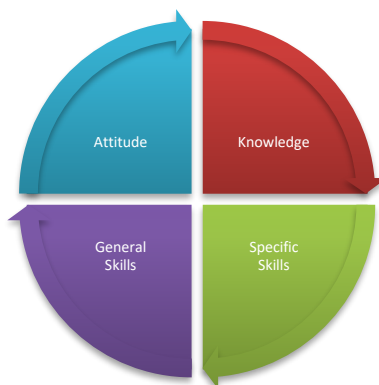

Figure 2. Learning Outcomes for Higher Education Level

Learning outcomes of Curriculum and Material Development (CMD) course in this research include:
1) Learners' mastery on relevant theories in Curriculum and Material Development course.
2) Learners' characters of being discipline (on time in submitting tasks), being collaborative (able to work together in a team), being creative (able to create original ideas poured in tasks), and being responsible (not doing plagiarism).
3) Learners' general skill as the ability in using online technology to access, analyze, formulate, produce, and present a knowledge.
4) Learners' specific skill as the ability in producing scientific article related to Curriculum and Material Development in terms of English as Foreign Language (EFL) or English as Second Language (ESL).

2. Methods

After implementing SABELS from March to July 2021, the researchers conducted a questionnaire study through Google form. The sample was 215 learners who participated in class of Curriculum and Material Development (CMD). To find satisfaction of the implementation of online SABELS, 20 items of closed-ended questionnaires (Likert 4 Scale) were used. Those items were categorized into: satisfaction towards learning process and satisfaction towards learning outcomes. To find obstacles during the implementation, 1 item of open-ended (essay) questionnaire was used. The detail questionnaire is in table below:

Table 2. Classification of Questionnaire

No	Statement	Category	Sub Category
1	The lesson plan provided on the web is complete and understandable		
2	The references provided on the web are relevant to the material		Process A: Observing
3	The material (in PowerPoint form) provided on the web is understandable		
4	Lecturers' presentation through video conference is understandable		
5	Questioning process through video conference is effective and efficient.		
6	There is clear format (template) to accomplish tasks.		Process B: Questioning
7	Time allocation for accomplishing task is suitable to its level of difficulty.	Learning Process	
8	Online learning in team work is significant to get knowledge and accomplishing task.		
9	Interaction between lecturers and students is well established through online consultation		
10	Interaction between students is well established through the social media used		Process C: Collecting and Associating
11	Online consultation by lecturers is very helpful in completing assignments		
12	Using internet facilities in the process of searching and selecting information as a comparison to readily available references is very effective for task completion.		

13	Presentation of assignments through online media is effective and efficient	
14	Peer assessments are very helpful for revision of assignments	Process D: Communicating
15	The allotted time for revision of assignments after the presentation is appropriate	
16	The assignment is assessed by lecturers objectively and based on rubric	
17	I obtained a lot of information and theories related to the curriculum and mastered it after taking this course	Outcome 1: Knowledge
18	I was able to utilize online media to fulfill my needs in learning the course	Outcome 2: General skill
19	I was able to produce original scientific papers after attending this lecture	Outcome 3: Specific skill
20	I am more disciplined, creative, collaborative, and responsible after attending this lecture	Outcome 4: Attitude

(Note: "Learning Outcomes" spans items 17–20)

The questionnaire was developed by the researchers; therefore, a trial was conducted to find its validity and reliability. The validity was tested by using Pearson formula through SPSS, the result is drawn below:

Table 3. Correlation of Learning Process Items

		Process_A	Process_B	Process_C	Process_D	Process Indicator
Process_A	Pearson Correlation	1	.359**	.304**	.214**	.662**
	Sig. (2-tailed)		.000	.000	.002	.000
	N	215	215	215	215	215
Process_B	Pearson Correlation	.359**	1	.325**	.266**	.662**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	215	215	215	215	215
Process_C	Pearson Correlation	.304**	.325**	1	.405**	.784**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	215	215	215	215	215
Process_D	Pearson Correlation	.214**	.266**	.405**	1	.666**
	Sig. (2-tailed)	.002	.000	.000		.000
	N	215	215	215	215	215
Process Indicator	Pearson Correlation	.662**	.662**	.784**	.666**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	215	215	215	215	215

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4. Correlation of Learning Outcome Items

		Outcome_1	Outcome_2	Outcome_3	Outcome_4	Outcome Indicator
Outcome_1	Pearson Correlation	1	.143*	.064	.002	.535**
	Sig. (2-tailed)		.036	.348	.979	.000
	N	215	215	215	215	215
Outcome_2	Pearson Correlation	.143*	1	.179**	.013	.626**
	Sig. (2-tailed)	.036		.009	.845	.000
	N	215	215	215	215	215
Outcome_3	Pearson Correlation	.064	.179**	1	-.006	.574**
	Sig. (2-tailed)	.348	.009		.934	.000
	N	215	215	215	215	215
Outcome_4	Pearson Correlation	.002	.013	-.006	1	.454**
	Sig. (2-tailed)	.979	.845	.934		.000
	N	215	215	215	215	215
Outcome Indicator	Pearson Correlation	.535**	.626**	.574**	.454**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	215	215	215	215	215

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table 5. Validity of All Items

		N	%
Cases	Valid	215	100.0
	Excluded[a]	0	.0
	Total	215	100.0

The reliability of instrument was tested by using Cronbach's formula through SPSS, the result is drawn below:

Table 6. Reliability of Instrument

Cronbach's Alpha	N of Items
.685	20

3.   Results and Discussion

3.1   Satisfaction towards Learning Process

Learning process includes observing, questioning, collecting, associating, and communicating. There are 4 statements (S1, S2, S3, S4) for observing process, 3 statements (S5, S6, S7) for questioning process, 5 statements (S8, S9, S10, S11, S12) for both collecting and associating process, and 4 statements (S13, S14, S15, S16) for communicating process.
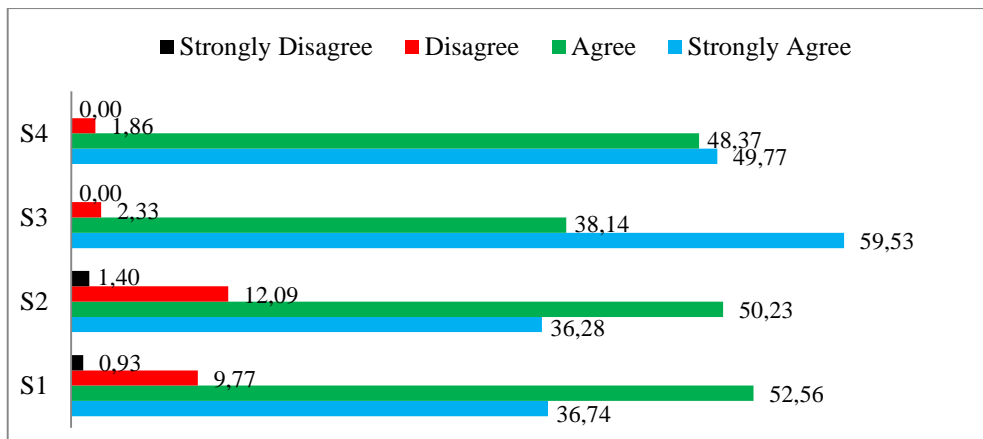
Figure 3. Responses towards Observing Process

Figure 3 shows the learners' responses towards activities in observing process (i.e. lesson plans, learning sources, materials, and lecturing). In statement 1, 36.74% of respondents strongly agreed, 52.56% said they agreed, 9.77% disagreed, and 0.93% of them strongly disagreed. This data indicates that the lesson plans provided by lecturers were well-designed and suitable to topics of each meeting. There was slight difference between data in S1 and S2. In statement 2, respondents who admitted strongly agree were 36.28%, agree were 50.23%, disagree were 12.09%, and strongly disagree were 1.40%. It means that the references provided on the web were relevant to the material. In statement 3, there were 59.53% of respondents who stated strongly agree, 38.14% agree, and 2.33% disagree. This shows that the materials provided on the web were comprehensible. The materials can be understood by the learners. Almost similarly, statement 4 indicates that respondents who admitted strongly agree were 49.77%, 48.37% agreed, and 1.86% disagreed. This means that respondents understood the lecturing presented through video conference application. From statement 1, 2, 3 and 4, it can be generated that respondents were very satisfied to the activities in observation process.
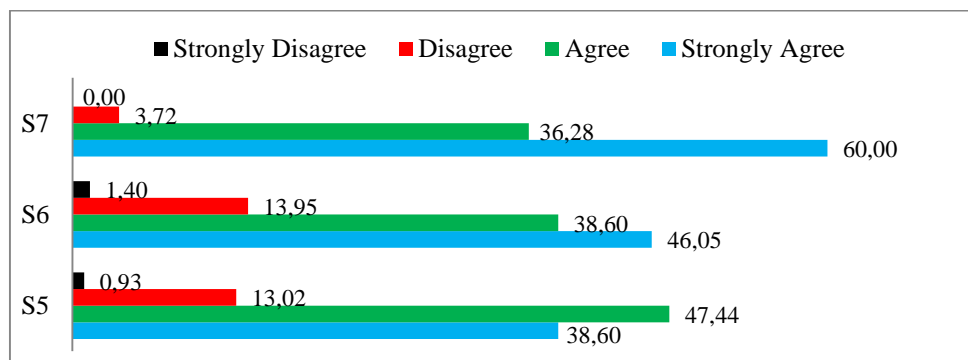

Figure 4. Responses towards Questioning Process

Figure 4 shows learners' responses towards activities in questioning process. Respondents who strongly agreed with statement 5 were 38.60%, agreed were 47.44%, disagreed were 13.02, and strongly disagreed were

0.93%. This data indicates that question and answer sessions between lecturers and learners through online video conference were effective. In statement 6, there were 46.05% of respondents strongly agreed, 38.60% agreed, 13.95% disagreed, and 1.40% strongly disagreed. This means that the format of accomplishing given tasks were clear and understandable. Differently from previous statements, the respondents who admitted strongly agree were highly increased (60%), and agree were 36.28%, meanwhile those who disagreed were 3.72%. It indicates that the time allotted to accomplish the given tasks was enough and suitable to the level of task difficulty. Results on these statements (S5, S6, S7) generate those learners were very satisfied with the activities in the questioning process.
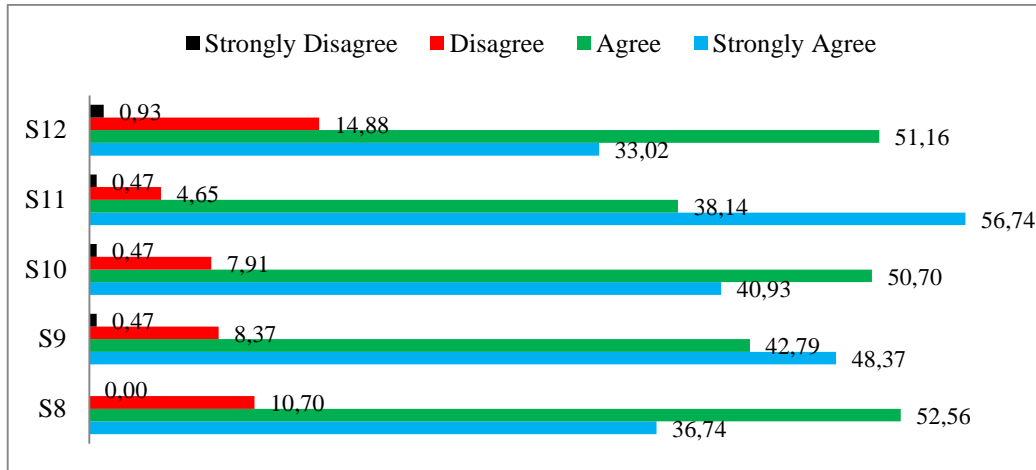

Figure 5. Responses towards Collecting and Associating Process

Learners' responses towards activities in collecting and associating process can be seen in figure 5. In statement 8, respondents who stated strongly agree were 36.74%, agree were 52.56, and disagree were 10.70%. This data indicates that though team work was held through online media, it was still significant and beneficial specially to accomplish tasks. In statement 9, there were 48.37% of respondents who strongly agreed, 42.79% agreed, 8.37% disagreed, and 0.47% strongly disagreed. This indicates that interaction between lecturers and learners was well established through online consultation. In statement 10, 40.93% admitted strongly agree, 50.70% agree, 7.91 disagree, and 0.47 strongly disagree. This data shows that interaction among students was also well-established through social media. Result on statement 11 and 9 are interconnected where 56.74% of respondents stated strongly agree, 38.14% stated agree, 4.65% stated disagree, and 0.47% stated strongly disagree. This proves that online consultation was effective in order to accomplish tasks. Statement 12 shows that 33.02% of respondents were strongly agree, 51.16% were agree, 14.88% were disagree, and 0.93% strongly disagree. This indicates that using information in internet was really helpful in completing their tasks. From statement 8 to 12, it can be concluded that respondents were very satisfied with activities in both collecting and associating process.
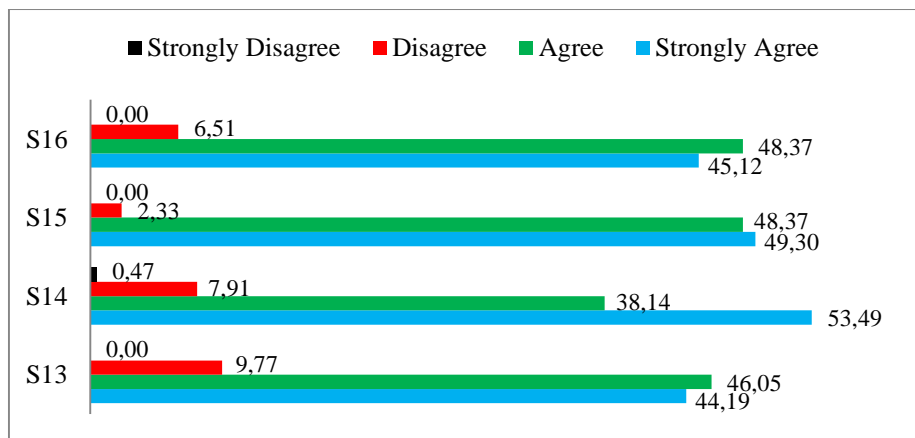

Figure 6. Responses towards Communicating Process

Figure 6 shows learners' responses towards activities in communicating process. In statement 13, learners who strongly agreed are 44.19%, 46.05% agreed, and 9.77% disagreed. This means that online presentation by

learners as a report of their task was effective. In statement 14, those who strongly agreed are 53.49%, agreed 38.14%, disagreed 7.91%, and strongly disagreed 0.47%. It indicates that peer assessment during presentation were very helpful in revising their task. In statement 15, there are 49.30% of respondents who strongly agreed, 48.37% agreed, and 2.33 disagreed. This means that there was enough time for them to revise their task after presentation done. Then, in statement 16, 45.12% of respondents admitted strongly agree, 48.37% agreed, and 6.51 disagreed. From figure 6, it can be concluded that learners were very satisfied with activities in communicating process.

3.2 Satisfaction towards Learning Outcomes

Learning outcomes in CMD course were categorized into 4 parts: knowledge, general skill, specific skills, and attitude.
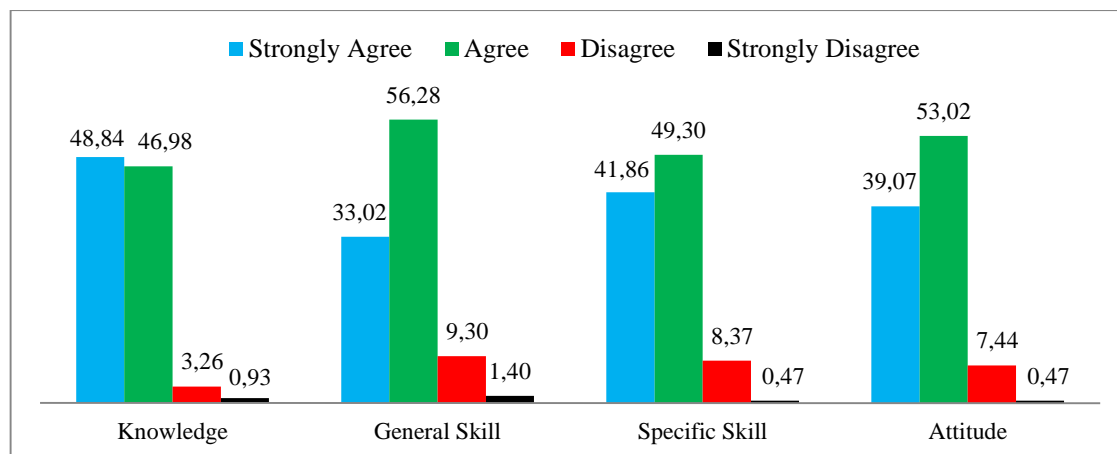

Figure 7. Responses towards Learning Outcomes

Knowledge refers to learners' understanding towards theories of educational curriculum development. The measurement of knowledge outcome was done through quizzes, tasks, mid and final examination. The result of questionnaire shows that 48.84% strongly agreed, 46.98% agreed, 3.26 disagreed, and 0.93 strongly disagreed to statement 17. This means that using SABELS in online CMD course enabled learners to obtain and comprehend a lot of information and theories related to the curriculum.

The next category is general skill, which is the ability in using online technology in accessing and producing knowledge. Learners who admitted strongly agree to statement 18 were 33.02%, 56.28% agreed, 9.30% disagreed, and 1.40% strongly disagreed. This indicates that SABELS encouraged learners to be competent in utilizing online media in searching massive information and use them as new knowledge for them.

Specific skills in CMD are learners' ability in producing scientific article as a result of a mini research and present their paper in a mini seminar. There were 41.86% of respondents who strongly agreed, 49.30% agreed, 8.37% disagreed and 0.47% strongly disagreed to statement 19. This means that SABELS promotes a research-based learning where learners should participate in a mini research project in order to obtain deeper understanding on the course.

Assessment in learning attitude was done through observation on the task completion. The attitudes included being collaborative (able to work in a team), responsible (able to complete tasks), creative (able to produce original work without plagiarism), and discipline (able to be on time). The questionnaire shows that 39.07% strongly agreed, 53.02% agreed, 7.44 disagreed, and 0.47 strongly disagreed. This data concludes that SABELS motivated character building-based learning.

3.3 Obstacles during Online Learning

Responses towards obstacles were written in essay form. Respondents were asked to express their opinion related to obstacles during online CMD course. From 215 responses, the data can be generated into 5 obstacles:

a. Unstable internet network. Since the pandemic of Covid-19, learning from home has been applied. More than 70% of the respondents stated that they have problems because of internet network. Some of them who lived in village argued that internet is hard to access. They should find spots where they can have internet signals. For some of them, finding this spot means spending hours in hiking hills or high lands. The condition

may get worse if it is raining. This problem caused ineffective online learning especially during video conference or discussion through chatting. Some of them were late in submitting tasks and exams due to this problem.

b. Frequent power outage. This problem dominantly occurred in Pematangsiantar and Simalungun area and is related to the first problem. When the power was off, somehow network of internet was also off. Almost 55% of the respondents experienced this power outage. This also caused online learning ineffective especially during video conference.

c. Slow response by lecturer in chatting. About 50% of respondents claimed that their chat was responded for few hours later. Discussion was held in 2 forms: video conference, based on schedule (synchronous learning), and chatting via WhatsApp (asynchronous learning). Since chatting did not demand real-time, late-response is not a serious problem in this case. Learners may not understand the different function of these two online learning models.

d. Doing online team work spends a lot of time. More than 40% of respondents complained about how hard it was to do online discussion among learners. This happened as a result of some factors as discussed in previous points. Due to internet signal or power problems, they should reschedule their discussion. Sometime while in video conference, low bandwidth causes pixelated problems in video or sound quality. This problem forced them to spend more time.

Lack of motivation in self-learning. About 35% of respondents admitted they were less motivated during online learning because they preferred on-site rather than online meeting. They claimed that in an on-site meeting they can interact with their lecturer and classmates without any digital barriers which encourages them to learn. This may consider as "homesickness", a situation where they miss to what they used to do before the outbreak of Covid-19.

4. Conclusion

Applying SABELS in online course of CMD for higher education utilizes both synchronous and asynchronous models (blended). Learners were very satisfied towards all activities in the 5 processes of SABELS (i.e., observing, questioning, collecting, associating, and communicating). Though this research is questionnaire based, a brief conclusion may be generated that SABELS has encouraged learners to do collaborative, research-based, and character building-based learning.

Since online learning is a must nowadays, educators should be more creative and adaptive to technology otherwise our role will be replaced by internet. As an alternative strategy, SABELS is recommended to be applied with some remodeling on the lesson plan for any kind of subject matters of different difficulty level.

The result of this study was based on questionnaires and demands further investigation in experimental design to find its effectiveness in higher education level. An important message goes to Government of Indonesia that it is crucial to provide internet access in villages so that online learning can be organized effectively. It is true that government has freely given big internet quota to all learners but it is useless to those who lived in some areas which have not access to the internet.

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