Acculturating Adult Learners' Critical Thinking by Limited Facilitation on Virtual Courses

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Abstract The worldwide phenomenon of the Corona Virus Disease 2019 (the Covid-19) has disrupted many sectors, including the educational process in higher-level education in Indonesia. Such condition has endorsed the stakeholders to find media, strategy and materials to optimize both the learning output and outcomes. This article is an ongoing applied study addressed to illustrate a hundred adult learners' process in acculturating their critical thinking through HOTS and meta-cognitive dimension with the limited virtual course facilities. Four steps were carried out to cultivate the students' critical thinking, such as: (1) acculturating learning through HOTS & meta-cognition; (2) involving students in self-accessing on the selected online cultural materials; (3) conducting online group discussion on the self-accessed materials to comprehend the content of the materials; (4) evaluating other group works. The aforementioned phases need both the students' HOTS and meta-cognitive dimension inter-vented through PIORE (Planning, Implementing, Observing, Reflecting and Evaluating) procedure. A closed-questionnaire and pretest-post-test were used to collect data of the students' before-after learning process through HOTS and meta-cognitive dimension improvement. The first year investigation reveals that they have been well-acculturated to explore their critical thinking both in delivering and responding to the given queries stimulus. It was shown by the gain score achievement of 2.4. This score resulted from Md (Mean Difference was 5.0 to 7.4). This was considered less-optimal due to the limitations of the existing online media, in addition to the ineffectiveness of internet access

in their living areas. Such findings provide forthcoming issues to solve for future studies.

Keywords HOTS, Applied Study, Meta-Cognitive Dimension, Closed-Questionnaire, Critical Thinking

1. Introduction

The Ministry of Education and Culture of RI, through all universities, has been currently trying technically and strategically avoiding stagnation in the education sector, as the effect of Covid-19, both from the level basic to higher education. One of the efforts is the implementation of learning from home (LfH) or working from home (WfH). Such implementation raises various problems, especially for those students with middle and lower economic class. At some higher level of education, LfH has been mostly carried out through CELS (centralized full-e-learning). Before the Covid-19 out-breaking, CELS was only used in certain courses as a systemic test of online learning.

CELS is also required to be held in each course in all majors at least twice in one semester. The existence of Covid-19 forces all lectures to use it. The preliminary data show that the use of such link raises 2 kinds of technical and academic problems.

The technical problems include as follows. Firstly, not all courses match with the available e-learning link, particularly for the English Department (ED), one of the

departments available at the Faculty of Teacher Training and Education (FTTE). Secondly, not all lecturers and students are accustomed to using CELS which requires more complicated preparation compared to the conventional lectures. Third, the use of CELS financially burdens some students (and most of the lecturers). Fourth, the problem on the network availability in the students' living area, for not entirely areas easily covered by the signal because of its distance from the server.

Academic problems, related to the demands of the Indonesian National Qualification Framework (INQF) or what so-called *Kerangka Kualifikasi Nasional Indonesia* (KKNI) which is a statement of the quality of human resources focused on the higher learners learning outcomes [5]. NQF is a qualification level structure formalized by the country. The qualification level is described in the description of learning outcomes. Qualification is a person's ability to contribute to society and if this contribution is recognized by the community, then that person can be given responsibility and is entitled to authority and remuneration. Qualification can be obtained by a person through independent study and work experience [14].

INQF has highly demanded mastery for all of the higher-level institution students, mainly those related to knowledge dimension skills (such as factual, conceptual, procedural and meta-cognitive) either at the level of Low Order Thinking Skills (LOTS) or the High Order Thinking Skills (HOTS) as well as the aforementioned knowledge dimensions. In the meantime, previous studies recommended to significantly develop such learning knowledge dimension [10,22,28,29] for preparing the graduates future life by acculturating their critical thinking.

Referring to such appeared problems, this study aims at acculturating the higher-level students' critical thinking in their learning process through HOTS and meta-cognitive knowledge dimension dealing with Covid-19 pandemic phenomenon with limited online link facilitation. Learning acculturation in this study is intended as a learning habit by incorporating cultural elements as content knowledge or language content. Learning is generally defined as a conscious process which involves a person's memory regarding a variety of information being learned, for example implementing language rules, greetings, and using vocabulary [31].

Learning acculturation in this study is addressed to English learning for higher-level students in Indonesia which are usually done in the first semester or the first year. So far, English courses had been previously conducted conventionally, and had neither accessed regional nor national needs, including benefiting the existence of Javanese culture as learning materials. Meanwhile, it has been one of the national properties for a long time, even has been recognized by UNESCO as one of the worldwide ancestors' valuable heritages since 2003.

Considering the fact, such Javanese culture particularly wayang, should be not only the students' needs but also to be institutional, regional and national needs to maintain its sustainability.

However, as a consequence of the various potentials and needs of students, the learning process must be adapted to the conditions of students but keep them being innovative, creative, effective and fun (ICEF) students [6]. ICEF achievement can be actualized by acculturating students' higher-order thinking skills (HOTS) and the knowledge dimensions of factual, conceptual, procedural and meta-cognitive. However, the facts show that the majority of teachers candidates have not actualized such knowledge dimensions significantly, particularly the meta-cognitive knowledge level [10]. Meanwhile, meta-cognitive skill is crucially needed to face and solve daily life problems. Acculturating the use of those two elements needs critical thinking acculturation.

Acculturation is the process in which people of different cultural backgrounds come together and form a culture different from their original culture [20]. The type of acculturation of a person experiences can affect their behaviour. More specifically, it may moderate the effects of prejudice and discrimination. The term 'acculturation' in this study is used as a technique to cultivate the students' critical thinking, particularly regarding their understanding in catching up the moral messages embedded in the selected wayang stories they are learning.

Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. Learners may be acculturated to use their critical thinking through the learning process, including in their language learning. This is due to their existence as an organism who is endowed to flourish their full potential of thinking [35]. Jew [11] asserts that human is naturally gifted to develop his/her: perception, cognition, learning, memory, decision-making, and action-taking. In this study, critical thinking was used as the basis of acculturating the students' use of HOTS and a meta-cognitive dimension all at once.

Higher-order thinking skills (HOTS) are a distinguishing concept of critical thinking skills from low-level learning outcomes achieved through memorization sequential to HOTS by involving synthesis, analysis, reasoning, understanding, application, and evaluation. The HOTS concept is a Bloom taxonomy which has been launched since 1956 to develop students' capacities in analyzing, evaluating, and creating through their factual, conceptual, procedural and meta-cognitive (FCPM) knowledge dimensions [24,33,34]. The ability to think at the meta-cognitive level involves the HOTS and the three dimensions of FCP (factual, conceptual and

procedural) [21]. In this project, HOTS was used to develop the students' ability in acculturating their meta-cognitive knowledge competence through their understanding of the hidden messages embedded in the learning materials they were learning.

Meta-cognition is the ability to think about one's thinking. 'Meta' means beyond and 'cognition' means thinking. So, meta-cognitive strategies involve reflecting on and regulating how someone thinks. Having this skill is essential for improving human own productivity and effectiveness at school or work. By applying metacognitive strategies, someone may become a better learner for it can control not only one's thought but also the actions which will be much more effective [7]. This means that both thinking levels may be effectively implemented in virtual courses.

A virtual course is an online learning environment. The environment can be web-based and accessed through a portal or software-based and require a downloadable executable file. Just like in a real-world classroom, a student in a virtual classroom participates in synchronous instruction, which means that the teacher and students are logged into the virtual learning environment at the same time. Such type of course technology has been currently implemented everywhere since the out-breaking of Covid-19, particularly during this study. Great teachers can succeed in a virtual learning environment just like they do in the traditional classroom [30].

Referring to the above concepts, this study employed G-meet (Google Meeting) and WAG (What's App Group) as the selected media for the learning process since only those application forms were considered affordable to use for the students, besides they can be used freely and less-money consuming.

This study starts by analyzing the students' needs that also have become the institutional, regional, national, and even worldwide needs, namely in conserving the Javanese culture heritages, particularly *wayang* stories.

The definition of needs analysis in this study is limited by synthesizing various opinions of experts, which are relevant to the existing problem, namely as follows: "Needs analysis is research that is deliberately designed to offer making decisions about linguistic deficiency, namely description about the difference between what can be done (*das Sein*), and what should be done (*das Sollen*) by students regarding language". Needs analysis is crucially used as the basis for formulating learning objectives [8].

The current fact (*das Sein*) is that teacher candidate students in Indonesia have never accessed Javanese culture as learning materials. The noble Javanese culture needs to be preserved, especially by the nation's future generations. Ironically, many Javanese cultural products have even been recognized by UNESCO as international cultural assets originating from Indonesia. Therefore, it is an obligation (*das Sollen*) for the teachers to involve the candidate teacher students to take part in their cultural

heritage preservation through their learning materials, particularly *wayang* orang or human puppets story series.

Wayang stories embed hidden moral values that are matched to acculturate the students' meta-cognitive knowledge dimension skill. Thus, in this study, they are used both as the materials to cultivate the students' meta-cognitive dimension skill and all at one to encourage the students to have the responsibility in preserving such valuable ancestor's heritage.

This study involved teacher candidates who were taking an English course at FTTE in the first semester. They come from various regions in Indonesia, some even come from other countries. Conceptually, they were including the category of adult learners (AL). AL has 8 characteristics, namely as follows. Adults are characterized by maturity, self-confidence, autonomy, solid decision making, and generally more practical, multitasking, purposeful, independent, experienced, and less open-minded and receptive to change [16]. This study uses the aforementioned characteristics of AL as a consideration in determining their learning program using HOTS and meta-cognitive dimension through CLLA (Cultural Language Learning Approach) and OBNALA (Online Based-Needs Analysis for Learning Acculturation) technique to access their needs.

CLLA is a language learning approach that focuses on the utilization of traditional culture as the learning content. The goal is to take advantage of culture traditional, especially the Javanese culture as the language learning content [9]. The materials content include traditional ceremonies, buildings, traditional clothes, folk tales, traditional songs, *wayang* (human and/or leather puppets stories), traditional heirlooms, and performances such as traditional dance and *ketoprak*. *Ketoprak* is a kind of traditional Javanese plays, usually playing old historical life stories accompanied by a set of gamelan (Javanese music instruments) orchestra, dances and *tembang* (traditional classical songs).

In this study, a set of puppets story series (what so-called *wayang*) was used as a media to bring the culture closer to teacher candidate students. It is considered that *wayang* is a national asset that has even been recognized by UNESCO as one of the world's cultural assets besides *Keris*, Batik and *Reyog* since 2003 [32,15,23]. However, until now such kinds of heritages have not successfully drawn the attention of the younger generation. Ironically, many foreign tourists are commonly interested to enjoy and even to learn about Javanese *wayang* which is one of the world's masterpieces. Therefore, it is necessary to introduce *wayang* more to the teacher candidate students so that such valuable heritages can be transmitted to preserve by those future teachers through their future students.

OBNALA (Online Based-Needs Analysis for Learning Acculturation) is a need analysis-based learning culture technique. This OBNALA technique procedure involves

acculturation of learning using CLLA, HOTS and meta-cognitive dimension. The aforementioned three aspects are implicitly demanded by the current higher education curriculum, what so-called KKNI (*Kerangka Kualifikasi Nasional Indonesia*) or INQF (Indonesian National Qualification Framework). INQF is one of the steps to realize the quality and identity of Indonesian human resources. The formulation of learning achievement in the graduate competency standard is expressed into three elements, namely: attitude, knowledge, and skills. The skills which are categorized into general and special skills are tailored for college graduates [12]. In this study, INQF is accessed as the basis of formulating the learning objectives.

This study consists of four sequential procedure, namely as follows: (1) Acculturation of learning through CLLA, HOTS & meta-cognition; (2) Involving students' self-access on the selected online cultural materials to facilitate learning; (3) Online group discussion to understand the target materials being learned; (4) Self-assess their discussion results. The culture learning is carried out by involving students to access target cultural material (in the form of Mahabharata puppet story series). The target learning materials are selected based on the Learning Outcomes formulation as decided in the Semester Course Plan. The selected materials are discussed virtually through G-meet (Google Meet) and WAG (What's App) link forums and the results are assessed using Shepard (2015) holistic scoring rubrics. As an illustration, the OBNALA technique is presented in Figure 1.

2. Materials and Methods

This applied research involved 100 (a hundred) teacher candidate students of the first Semester at the

FTTE, UMBY currently joined the online English I course. They were all new students who enrolled in the first semester. They were conceptually categorized as adult learners and should be categorized into pre-advanced learners. Since they were considered as new students coming from various regions with various initial intakes of English language skills as the product of various secondary schools with different quality of learning, they must be tested. A preliminary test was conducted to determine the students' average intakes as the intermediate level. This test was intended to get early data on the students' level of English competences. The pretest results were, then, used as the basis of formulating course objectives and the learning materials both in their cognitive and their meta-cognitive dimension competences.

The investigation was carried out towards the learning process implementation using CLLA modified with the OBNALA technique. It was conducted as an effort to cultivate learning through the introduction of Javanese culture to students as the mandate of Article 32 of the 1945 Constitution and Presidential Instruction No. 16 of 2005 concerning the nation cultural preservation. A hundred students were purposely involved as the research participants. It was conducted in the first year of totally two years of research projects which will end in the year 2021.

The current (2020) on-going project aims at acculturating the higher-level students' critical thinking in their learning process through HOTS and meta-cognitive knowledge dimension dealing with Covid-19 pandemic phenomenon with limited online link facilitation. Acculturation was carried out by exploring the implementation of a learning design concerning English language learning using CLLA with the OBNALA technique. 7 human puppet stories were selected as online materials.

Figure 1. OBNALA (Online Based-Needs Analysis for Learning Acculturation)

The design includes cyclical activities inspired by Kemmis & McTaggart [13]: planning-implementing-observing-reflecting. In this research, the model was combined with 'evaluating' activities so that the cyclical activities become: planning-implementing-observing-reflecting-evaluating or PIORE in short. In this study, PIORE is explored into 5 variables that will be an in-depth investigation. Figure 2 illustrates the cyclical procedure of PIORE.

Figure 2. Applied Research Model (Developed from Kemmis & Taggart, 2016)

This research paradigm starts from the PIORE (planning, implementing, observing, reflecting, and evaluating) procedure investigation. The PIORE learning procedure is respectively presented as follows. 'Planning' activity was intended to plan English learning activities using CLLA and OBNALA technique with the teacher candidate students as the research participants. 'Implementation' activity was carried out to implement the results of the OBNALA which was an innovation in the application of the previous research findings, namely, CLLA. Learning activities were carried out by setting an online English class during a half-semester which consisted of 8 meetings, including the pretest and post-test. 'Observation' was accurately carried out when learning activities took place. It was intended to obtain data regarding the appropriateness of the use of CLLA and OBNALA as the learning approach and technique simultaneously. 'Reflection' activity aimed at collecting data regarding the strengths and weaknesses of using the two aforementioned components to be used as a basis for 'evaluation' on the learning process in a whole. 'Evaluation' was conducted toward the whole process of students' English learning using CLLA and OBNALA technique design. The results, then, were used as a basis for making improvements to the OBNALA prototype as a means of introducing and preserving Javanese culture through the research participants (teacher candidate students). The following is the procedural learning process

using CLLA with the selected Javanese *wayang orang* (human puppets) stories purposefully embedded within the OBNALA technique.

Firstly, acculturation of learning through CLLA, HOTS & meta-cognition was carried during the implementation phase. Secondly, learners' involvement in self-accessing on the selected online cultural materials was done during the observation phase. Third, conducting online group discussion on the self-accessed materials results which was intended to comprehend the whole content of the stories that were carried out during the reflecting phase. Fourth, self-assessing their discussion results which were oriented to develop the students' capacities in evaluating others works, ideas, and opinions. The aforementioned phases need both the students' HOTS and meta-cognitive dimension competence. Figure 3 depicts the research paradigm that can be the basis of the findings.

Figure 3. Research Paradigm

Acculturation on the students' critical-thinking as the observed focus of this project was inter-vented by habituating the students (who were involved as the research participants) for actuating the following HOTS aspects such as (1) analyzing every of the given materials picked from the wayang stories video available from the YouTube in groups of five; (2) evaluating the content (regarding the hidden moral value messages) and (3) creating a synopsis related to every of the given tasks in groups after discussing the content of the stories. In this case, the meta-cognitive knowledge dimension as the other focus to measure the students' critical thinking was conducted in the form of the groups' discussion virtual forum using Google Meeting application coordinated by a classroom moderator. Every group was assigned both to perform its every synopsis and assess the other groups' performances. During the discussion, the group presenter delivered its synopsis to be commented and scored by the other groups using Sheppard's [25] Scoring Rubric. The focus of scoring was on the linguistic and knowledge dimension acquisition aspects (See Table 2 as an illustration). Such activities were intended to cultivate the

students' critical thinking through acculturation actuation of HOTS and meta-cognitive dimension aspects.

Data in this study were analyzed descriptively by computing the students' tests results using Sheppard's [25] scoring rubric for integrated language skills. In this study, a hundred participants were grouped into 20 groups. They were virtually assigned the same learning materials for a half-semester consisted of 8 meetings. 7 selected wayang stories were distributed to discuss for 6 virtual meetings. The first and the eighth meetings were used to conduct pre-test and post-test with the same set of serial wayang story entitled "Mahabandana" while the rest were assigned to discuss in groups within the 6 virtual meetings. Such a story was tested twice as the pretest and post-test materials.

Evaluation phase involves the students' assessment towards the other students' works assigned for them to do in groups of five. Sheppard's [25] holistic scoring rubric (HSR) was used as the students' guide to assessing the other group's works. The HSR includes 8 assessment aspects (such as overall impact, clarity, organization, mechanic, grammar, style and presentation) with 5 scoring levels (not yet, emerging, developing, effective, and strong) that spread from 1 to 10 points. In a whole, if all aspects are strong, the total scores will be 80. Vice versa, if all aspects get the lowest score of one point, the total score will be 8 points only. The integrated skills scores were commented in a whole as a total score. The data analysis was done towards the evaluation results.

For psychological consideration, the test result was respectively scored from the 'developing' level in which scores spread from 5-6 to 'effective' with 7-8 scores, and 'strong' with 9-10 scores. As it is known, Sheppard's scoring rubric originally spreads from 1-10. But in this case, the scoring started from 5 to 10, for avoiding the students' demotivation. Such policy was intended to motivate the students' efforts in their learning process since grades may affect students' anxiety and avoidance of challenging courses [3,27]. It is also common for students to lose motivation if tests are continuously too challenging. This does not provide a sense of achievement and lowers motivation in education over time [26].

3. Findings

This project reveals the PIORE (planning, implementing, observing, reflecting and evaluating) activity results that were conducted cyclically. The findings are described as follows. The first stage was planning. Planning is the first phase of this study. In this phase, all the learning processes during a half-semester of materials were prepared accurately by referring to the results of the stake-holders' needs analysis as the basis of designing students' worksheets. In this case, the selected 7 series of wayang stories were employed to acculturate the students' HOTS and meta-cognitive dimension skills use.

The seven-story series were *Mahabandana* (It means a giant rope barrier of virtue which depicts *Pandava* family life journey), *Dewa Ruci* (Human's looking for Identity), *Abimanyu Gugur* (The death of *Abimanyu* as a heroic Knight at the battle), *Satya Gandewa* (the truth of crossbow), *Kikis Tunggarana* (*Tunggarana* State's Border), *Karna Sumbaga Wirutama* (Karna's illustrious body sanctity), *Kangsa Adu Jago* (Kangsa pits humans with evil intentions). The *Mahabandana* was tested twice named as the pretest and post-test materials. Those selected materials contained high moral value messages that were explored to find through each of the implied story contents. Such learning activities were intended to acculturate their critical thinking abilities.

The hidden messages of the 7 stories are respectively provided in Table 1. Table 1 depicts the kinds of wayang stories employed to acculturate both the students' HOTS and meta-cognitive dimension thinking skills using CLLA and OBNALA technique. The embedded messages of the 7 selected wayang stories are as follows: (1) All evils must be destroyed by the goods; (2) The true happiness is within oneself; (3) There is another sky above the sky; (4) Arrogance may cause self-defeating; (5) Acquisition of assets that are not their rights must return to those who are entitled; (6) A debt of gratitude paid to death or The nature of defending the country, and the severity of repaying a debt of gratitude; and (7) The bad character of a child as a result of a mother's bad deeds.

Table 1. Wayang Story Titles and the Embedded Messages

Meeting	Wayang Story Titles	Embedded Message
1/Pretest	<i>Mahabandana</i>	All evils must be destroyed by the goods.
2	<i>Dewa Ruci</i>	The true happiness is within oneself.
3	<i>Abimanyu Gugur</i>	There is another sky above the sky.
4	<i>Satya Gandewa</i>	Arrogance may cause self-defeating.
5	<i>Kikis Tunggorono</i>	Acquisition of assets that are not their rights must return to those who are entitled.
6	<i>Karna Sumbaga Wirutama</i>	A debt of gratitude paid to death. The nature of defending the country, and the severity of repaying a debt of gratitude.
7	<i>Kangsa Adu Jago</i>	The bad character of a child as a result of a mother's bad deeds.
8/Post-test	<i>Mahabandana</i>	All evil must be destroyed by good.

The second stage was implementing. This phase involved two classes with totally 100 students and they were grouped into 5 members for each. Such learning strategy was used by considering the provided time that consisted of only eight meetings, including the midterm

test. Two test types were carried out at the beginning as a pretest and the end of learning as the post-test. The post-test was also treated as the midterm links. The two links were the most appropriate online media to use by the students during the COVID-19 pandemic condition. Even though G-meet was considered more easily and more flexibly than WAG, most students kept unable to access it easily, for the signals availability reasons. This case, of course, disturbed the discussion forum interaction. It was different when the learning process used WAG, all students could join the discussion forum, after watching the *wayang* stories video accessed from YouTube. The followings are the 5 (five) stages of the students learning activities.

Firstly, the planning revealed that all of the 7 selected *wayang* stories had not been watched by all of the students. This means that the materials gave new experiences. Secondly, the implementation phase reflected that there were two online media employed to support the students' virtual learning, namely G-meet and WAG, but the WAG was considered the more applicable for the whole students. Third, the students were more either enthusiastic or interactive in conducting their groups' discussion forum, though it was considered more time consuming to write their ideas or suggestions.

The third stage was an observation. It was carried out during the learning process implementation. It was treated towards the whole learning process by employing the seven selected *wayang* stories (See Table 1) as the media to acculturate the students use of both HOTS and meta-cognitive dimension personally, then, discuss it for each interactively in the classroom WAG. It seemed neither effective nor efficient, but the WAG was considered as the only virtual media that could be currently used. G-meet could be only accessed by 30% of 100 students while "the show must go on".

Even though the online media used to achieve the defined goals (the WAG) was considered less effective, but the main objective has acculturated the students to habituate their HOTS and meta-cognitive dimension capacities use, and not directly focusing on their learning achievements. Besides, students seemed to enjoy their learning process using WAG rather than the other links by the reasons for the existence of the signal in their residential areas. This was proved by their interactive discussion results within the implementation phase. In a nutshell, observation activities in this study resulted that mostly all students were actively involved when they discussed the materials after previously watching them by WAG.

The fourth stage was reflecting. Conceptually, reflection is cyclically carried out towards the results of planning, implementing and observing phases. Based on the aforementioned three phases' results, this study reflected as follows. Table 2 contains samples of HOTS and meta-cognitive questions delivered in each of the given learning tasks. The HOTS were addressed to acculturate the students three aspects of C4 (analysis), C5, (evaluation) and C6 (creation) competences as parts of the higher Bloom's taxonomy without intention to ignore the other three aspects of LOTS (Lower Order Thinking Skills) such as C1 (knowing), C2 (understanding), and C3 (implementing). Meta-cognitive dimension was intended to acculturate the students' critical thinking by exploring their self-thinking towards the delivered contextual queries.

The fifth stage was evaluating. The evaluating phase was done at the end of the learning process. A set of tasks were provided to do and to score. In this phase, self-and peers assessments were carried out by using Sheppard's scoring rubric as a guide of scoring the tasks in a whole.

Table 2. Samples of HOTS & Meta-cognitive (Inspired by Bloom's Taxonomy, 1956)

HOTS Queries (related to the linguistic/syntactical aspects)	
C4 (Analysis)	What linguistic terms can you get from reading/listening the story?
C5 (Evaluation)	Evaluate/assess the other group work using the provided clues! Is the group argument acceptable?
C6 (Creation)	Write a summary of the storyline " <i>Abimanyu Gugur</i> (Abimanyu's dead in the battle)"
Meta-cognitive Queries (Related to the content/knowledge comprehension)	
Why did the civil war between <i>Bharata</i> descendants occur?	
What do you think about the hidden moral message of the fight for <i>Kikis</i> (State boundaries) <i>Tunggorono</i> ?	
In the ' <i>Satya Gandewa</i> ' story, why has pride been conquered by humility?	
If you were <i>Bathara Kresna</i> , would you also instruct a woman to fight against <i>Resi Bhisma</i> as the super-natural knight? Explain your answer!	
In the <i>Kangsa Adu Jago</i> , what motive led <i>Kangsadewa</i> to challenge his adoptive father to pit human as a cock replacement? Why do criminals often get even more poignant retribution?	

The following was the formula used to compute the Mean Difference (Md) that shows the numerical or coefficient number of the gain score. The higher the coefficient number, the more significant the students' HOTS and meta-cognitive dimension acculturation will be.

$$M_d = \Sigma X_1 / n_1 - \Sigma X_2 / n_2 \text{ or } M_d = \bar{X}_1 - \bar{X}_2$$

Notes:

M_d is Mean Difference;

ΣX_1 is the total scores of Pretest takers;

ΣX_2 is the total scores of Post-test takers;

n_1 is the number of Pretest takers;

n_2 is the number of Post-test takers;

$\bar{X}_1$ = The average number of Pretest takers;

$\bar{X}_2$ = The average number of Post-test takers.

The Mean Difference formula was employed to compute both the pretest and post-test results of 20 (twenty) groups with 5 members for each. Using the Sheppard's scoring rubric, the 20 groups pretest takers resulted in the coefficient number of $\bar{X}_1 = 5$, for all groups still achieved such medium scores level at all aspects of the scoring rubrics included at the developing levels as one of the 5 scoring levels (not yet, emerging, developing, effective, and strong) that spread from 1 to 10 points with 8 assessment aspects (overall impact, clarity, organization, mechanic, grammar, style and presentation).

Table 3. Results of The Students' Average Pretest-Post-test of the Students' Critical-Thinking

(Using HOTS and Meta-cognitive knowledge Dimension) Acculturation

Group	Developing (Score: 6-7)	Effective (Score: 7-8)	Strong (Score 9-10)	Total
1	-	8	-	8
2	-	7	-	7
3	-	7	-	7
4	-	-	9	9
5	-	8	-	8
6	-	-	9	9
7	-	-	9	9
8	-	7	-	7
9	6	-	-	6
10	6	-	-	6
11	-	7	-	7
12	-	-	9	9
13	-	7	-	7
14	-	8	-	8
15	-	7	-	7
16	-	7	-	7
17	-	7	-	7
18	-	7	-	7
19	-	7	-	7
20	-	7	-	7
Σ	12	101	36	149
$\bar{X}_1$	0.6	5.005	1.08	7.405

The pretest result was far different with the post-test. The 20 groups post-test takers resulted in the coefficient number of $\bar{X}_2$, as presented at Table 3. If $M_d = \bar{X}_1 - \bar{X}_2$ while $\bar{X}_1 = 5$ and $\bar{X}_2 = 7.405$, the gain score is $7.405 - 5.0 = 2.405$ (reduced to 2.4). This means that there is relatively significant difference on the students' acculturation in their learning process using HOTS and meta-cognitive dimension through the given questions embedded in each of the selected materials being discussed. Even though the result seems significantly different, but it was considered less optimal, for the limitations of the signals provision in most of the students living areas.

4. Discussion

This part elaborates the four elements of interpretation, implication, limitation, and recommendation of the findings. As it is previously explained, this study reveals the answers of PIORE (planning, implementation, observation, reflection, and evaluation) learning process on acculturating a hundred students of the FTTE (Faculty of Teachers' Training and Education) HOTS and meta-cognitive dimension using CLLA (Cultural Language Learning Approach) with OBNALA (Online Based-Needs Analysis Learning Acculturation) technique. The main points of this study focused on acculturating the students, as the future teachers in using HOTS and meta-cognitive knowledge dimension. To achieve the goals, PIORE procedure was employed. The findings show that acculturating the students' meta-cognition knowledge was not different from theories of habituation.

Habituation is one of the simplest and most common forms of learning which allows people to tune out non-essential stimuli and focus on the things that demand attention. It happens in regular repetition in human everyday life, in which activities are probably unaware [4]. Habituation may reduce people sensitivity to a constant source of stimulation and release attention resources to process new distinct items [2].

In this study, habituation was used as one of the supporting theories that were connected to acculturate the students' critical thinking particularly in using their meta-cognitive dimension competence. In this case, meta-cognitive was benefited to involve the higher-level students to reflect on and regulate how they think contextually. By having and applying such a strategy, they may become better learners for they can control not only their thought but also the actions will be much more effectively. This statement implies that when learners "think about their thinking", they are more capable of self-improvement [19]. Meta-cognitive strategies can be learned, practised and made into habits to improve learning, studying and thinking skills into the future [7].

Somehow, there are some limitations in this study, particularly concerning the signals existence providers at

the areas of students' living. This is not a simple matter to solve such problems, except they move to the supported areas by the time they join the learning process. It is believed that the unplanned and rapid move to online learning without training, sufficient bandwidth, and preparation will affect a poor user experience since it is difficult to do a good job of teaching in a poor type of building and without adequate equipment and instructional materials [16, 18]. Referring to the limitation of this study, it was recommended for the future researches to find the most appropriate method for the students living in the remote areas with the reachable online media links with adequate signal affordability.

5. Conclusions

This applied research found 5 phases to implement acculturation of critical thinking for adult learners with limited virtual course facilities. PIORE (planning, implementing, observing, reflecting, and evaluating) procedure was carried out by benefiting WAG and G-meet links. The learning process involved the use of CLLA and OBNALA technique. The PIORE, CLLA and OBNALA were respectively employed as the procedure, approach, and technique to acculturate a hundred students. The project reveals that there was relative significant acculturation on the students HOTS and meta-cognitive dimension use in their learning process, for Md (Mean Difference), was 2.405 (reduced to 2.4). It shows improvement for the pretest average score was 5.0, while the post-test average score was 7.405 (reduced to 7.4). The gain score could be truly raised if various related parties meet the requirements of the ideal virtual lecture, such as: holding training, providing sufficient bandwidth, and being committed on preparing the learning process by preparing supporting gadgets and reachable signals. In this case, there were 50% of the students with lower economic background and living at the untouchable internet signals.

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REFERENCES

- [1] Anderson, L. W., & Krathwohl, D. R., "A taxonomy for

learning, teaching, and assessing, Abridged Edition. Boston, MA: Allyn and Bacon, 1st ed, 2001 (accessed Nov. 20, 2020).

- [2] Buskirk, A., "Habituation: Theories, Characteristics and Biological Mechanisms", <https://novapublishers.com/> (accessed Nov. 6, 2020)
- [3] Chamberlin, K., "The impact of grades on student motivation, 2018, <https://journals.sagepub.com/> DOI:10.1177/1469787418819728, (accessed Nov. 6, 2020)
- [4] Cherry, K., "When and Why Does Habituation Occur?" *International Journal of Science and Research (IJSR)*, 2019. <https://www.verywellmind.com/what-is-habituation-2795233>
- [5] Ditjend Dikti, "Akuntabilitas Penyelenggaraan Pendidikan Tinggi (Accountability of Higher Education Implementation)", Dit Jend. Pembelajaran dan Kemahasiswaan (Learning and Students Affairs), Kemenristek Dikti RI., 2015. <http://kkni.kemdikbud.go.id/asset/pdf/004-dokumen>
- [6] Dosen Pendidikan 2, "Landasan Yuridis Pendidikan", <https://www.dosenpendidikan.co.id/> (accessed Nov. 6, 2020).
- [7] Drew, C., "Examples of Metacognitive Strategies. Retrieved from <https://helpfulprofessor.com/> (accessed Nov. 6, 2020).
- [8] Hermayawati, "Pengembangan Materi Ajar Bahasa Inggris dengan Pendekatan Fungsional (Developing English Learning Materials Using Fungsional Approach): A Dissertation Research presented at the Open Senate Session Forum UNS", Surakarta: UNS, August 2008 pp. 1-21.
- [9] Hermayawati, "Analysis of the English teachers' understanding in implementing the 2013 curriculum: A paper published in the proceedings of "4th Asia Pacific Education Conference (AECOn) 2017", vol. 109, no. 1, pp.124-132, 2017. DOI: 10.2991/aecon-17.2017.25
- [10] Hermayawati, "Teachers' Efforts in Understanding the Factual, Conceptual, Procedural and Meta-cognitive Assessment Using the Revised 2013 Curriculum", *International Journal of Learning, Teaching and Educational Research* vol 19, no 5, May 2020, pp. 186-199. DOI: 10.26803/ijlter.19.5.11
- [11] Jew, S.H., "Designing Online Learning to Actual Human Capabilities", 2016. <https://www.slideshare.net/ShalinHaiJew/> (accessed Nov. 6, 2020).
- [12] Kemendikbud., "Undang-Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional (Law Number 20 of 2003 concerning the National Education System)", <https://blogs.newschool.edu/unchartedtesol/2015/10/18/rubrics-for-integrated-assessment/ne.com/> (accessed October 26th, 2020).
- [13] Kemmis, S., & McTaggart, R., "The Action Research Planner", 3rd ed., Deakin University Press, Geelong, 1992.
- [14] Komite Nasional Kualifikasi Indonesia (KNKI), "Referencing of the Indonesian National Qualification Framework to the ASEAN Qualifications Reference Framework", <http://kkni.kemdikbud.go.id/asset/pdf/> 2019, (accessed Nov 6th, 2020).
- [15] Lestari, W., "The Philosophy of Puppet Characters Bathara

- in Murwakala Play for the Value of Leadership Ethics”, *Harmonia: Journal of Arts Research and Education* vol. 14, no 1, pp. 8-15, March 2014. <https://journal.unnes.ac.id/nju/index.php/harmonia/article/viewFile/>
- [16] Li, C., & Lalani, F., “The COVID-19 pandemic has changed education forever”, <https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/> (accessed Nov. 6, 2020).
- [17] Malamed, C., “Characteristics of Adult Learners-The Learning Coach”, <http://thelearningcoach.com/2013> (accessed Nov. 6, 2020).
- [18] Mondal, P., “7 Important Factors that May Affect the Learning Process”, <https://www.yourarticlelibrary.com/learning/2013> (accessed Nov. 3rd, 2020).
- [19] Owen, D & Vista, A., “Strategies for teaching metacognition in classrooms”, <https://www.brookings.edu/2017/>, (accessed Nov. 6, 2020).
- [20] Pantoja, A., “Example of Acculturation And Assimilation Critical Thinking” <https://www.wowessays.com/free-samples/> (accessed Nov. 6, 2020).
- [21] Pintrich, P.R., “The role of metacognitive knowledge in learning, teaching, and assessing”, pp. 219-225, 2010. DOI: 10.1207/s15430421tip4104_3 [ps://www.tandfonline.com/](https://www.tandfonline.com/)
- [22] Putra, T.K. & Abdullah, D.F., “Higher-Order Thinking Skill (HOTS) Questions in English National Examination in Indonesia”, *Jurnal Bahasa Lingua Scientia*, vol. 11, no. 1, June 22, 2019. <https://www.researchgate.net/publication/>
- [23] Runnisa, A., “10 Seni dan Budaya Indonesia yang juga terkenal di Dunia dan juga telah diakui oleh UNESCO (The ten of Indonesian Art and Culture Recognized by UNESCO)”, <http://www.ulinulin.com/posts/> (published September 25th, 2018, accessed August 7, 2020).
- [24] Seman, S.C., Wan, M., Yusoff, W., & Embong, R., “Teachers challenges in teaching and learning for higher-order thinking skills (HOTS) in primary school”, *International Journal of Asian Social Science*, vol 7, no. 7, pp. 534-545, 2017. DOI: 10.18488/journal.1.2017.77.534.545.
- [25] Sheppard, R., “Rubrics for Integrated Assessment”, <https://blogs.newschool.edu/unchartedtesol/2015/10/18/> (accessed October 26th, 2020)
- [26] Silva, V., “8 Factors that Affect Students’ Motivation in Education”, <https://www.builtbyme.com/> (accessed Nov 6, 2020).
- [27] Stanovich, K., “How to Think Straight about Psychology”, 8th ed, Boston, MA: Allyn & Bacon, 2007, pp. 1-240.
- [28] Sternberg, R. J., “Handbook of creativity”, 5th ed, New York: Cambridge University Press, 2004, pp. 1-83.
- [29] Thomas, A., and Thorne, G., “How to Increase Higher Order Thinking?”, Metarie, LA: Center for Development and Learning, 2009. <http://www.cdl.org> (accessed Nov. 20, 2020).
- [30] Tierney, K., “How to Create a Successful Virtual Learning Experience”, <https://www.jobform.com/> (accessed Nov. 20, 2020).
- [31] Tomlinson, B., “Materials development for language learning and teaching. *Language Teaching*”, vol. 45, no. 2, pp.143-179, 2012. DOI:10.1017/S0261444811000528
- [32] Wayang Indonesia, “UNESCO Akui Wayang sebagai MasterPiece Dunia”. <https://wayang.wordpress.com/> (access ed August 7, 2019).
- [33] Watson, S., “High Order Thinking (HOTS)”. <https://www.thoughtco.com/2019> (accessed October 10th, 2020).
- [34] Wilson, O.L., “Anderson and Krathwohl Bloom’s taxonomy revised understanding the new version of Bloom’s taxonomy: A succinct discussion of the revisions to Bloom’s classic cognitive taxonomy by Anderson and Krathwohl and how to use them effectively”. <https://quincycollge.edu/content/2016> (accessed Nov. 10, 2020)
- [35] Young, R., “Understanding the Four Dimensions of Knowledge Management. <http://www.knowledge-management-online.com/2010>, (accessed October 25th, 2020).