Developing Higher Order Thinking Skills through Blended Learning among Moral Education Students

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Article History: Received: 10 November 2020; Revised: 12 January 2021; Accepted: 27 January 2021; Published online: 05 April 2021

Abstract: One of the features of 21st-century education is the encouragement of Higher Order Thinking Skills (HOTS). Through the Malaysia Education Blueprint 2013–2025, the government fosters the acquisition of HOTS in all subjects, including moral education subjects. Thus, blended learning, which integrates conventional teaching methods and learning activities that utilize online technology, is considered appropriate as an effective learning method for the digital generation. Therefore, this research aims to explore the potential of blended learning methods in generating HOTS among secondary school students. This qualitative study used 14 participants who were students in moral education classes in two secondary schools. Moral education students are involved in the five steps of the blended learning method; set induction, lesson development, classroom activities, assessment as well as closing and reflection. The findings show that blended learning methods can enhance students' thinking skills, such as the ability to apply moral skills, analyse moral issues, evaluate moral decisions and create instructional materials based on moral content. Therefore, this study proposes that the utilization of blended learning has implications for the learning process, especially in inculcating and developing HOTS among moral education students.

Keywords: Moral Education, Pedagogy, Higher Order Thinking Skills, Blended Learning, Teaching and Learning

1. Introduction

Thinking skills are one of the six aspirations outlined in the Malaysia Education Blueprint 2013–2025. Thinking skills are needed by every student to compete globally. In fact, critical thinking is one of the main goals of education. It is necessary to train students to become independent and reasonable thinkers so that they will be efficient citizens in modern society. Mastery of critical thinking skills is important for producing creative and innovative thinkers among students. In this regard, the thinking skills emphasized are the Higher Order Thinking Skills (HOTS), which are very important for developing 21st-century learners because the new trends in education development demand skills such as problem solving and critical thinking in order to foster it as a vital ability (NorhezanCheTeh, Nor Hashimah Isa & Ainon Omar, 2017). The education sector plays a very important role in generating quality human capital that can contribute to national development. To utilize information and communication technology (ICT) in education, nearly 10,000 schools in Malaysia were supplied with internet broadband and virtual learning environments through the iBestari Net Project (MahizerHamzah&MohdAzliYeop, 2016). As a result, the government has intensified efforts to improve the quality of education by applying more elements of HOTS in the construction of teaching resources and pupils' learning resources. The application of HOTS crosses all subjects and curricula in schools, including the subject of moral education.

According to the Ministry of Education Malaysia (2013), HOTS involve high intellectual skills, including four top-level Bloom's Taxonomy skills – applying, analysing, evaluating and creating. HOTS are also defined as the ability to apply knowledge, skills and values in reasoning and reflection when solving problems, making decisions and creating something. Among the objectives of the moral education program in Malaysia are enabling pupils to develop mature thinking, become capable of solving problems and make decisions based on moral and spiritual values (Moral Education Syllabus, KBSM, 2000). Hence, the strategies and methods of teaching moral education determine the development of critical moral thinking in the students (Chang, 2007).

Teaching moral values alone is not enough; involving students in real experiences that allow them to think, explore and act in a moral domain is also necessary. For this rationale, one of the goals of the Moral Education program in Malaysia is to educate students to think. In addition, the moral education program also strives to develop mature thinking based on moral values, as well as to produce students capable of critical and creative thinking (Moral Education Syllabus, KBSM, 2000). The mastery of critical and creative thinking skills is the catalyst for individuals to make sound judgments and accurate decisions in solving problems. HOTS, which involves critical and creative thinking processes that can generate innovative skills, can be realized through innovative teaching methods in schools.
Recently, there have been various problems in the process of teaching and facilitating moral education in Malaysian schools. Among them is the one-way teaching method, whereby teachers rely only on textbooks and preparatory books as teaching aids (VishalacheBalakrishnan, 2011). In addition, students are also unable to make rational choices to solve their real problems outside the school premises. Moral education teachers are still not very creative and take little initiative to diversify their teaching methods to attract students. As a result, students cannot apply the moral theories that they memorize in the classroom in real life. Teaching aids for moral education subjects are also few (Suppiah, Barathy& Sandra, 2017). The conventional method of teaching is to discourage thinking processes among students and, as a result, this method produces inactive or passive citizens (Norzihan,NurSurayyahMadhabala Abdullah, 2015). All these weaknesses have suppressed moral thinking or moral reasoning, which is an important component in the process of maturing moral development (Norzihan,NurSurayyahMadhabala Abdullah, 2015).

Research also shows that the use of teaching methods such as storytelling in the classroom will usually end with the students having (LOTS). They may list the values in a story without touching the aspect of rationality as well as student thought (Chia, 2007). In addition, the efforts taken by teachers to ensure that students understand the true meanings of the values contained in a story are still questionable. Teachers also rarely demonstrate the application of HOTS and the impairment of moral values of the students(NadarajanThambu, Noor Banu Mahathir Naidu, & Muhammad Atiullah Othman, 2018).

Thus, there is a wide gap between the pedagogy of moral education, which still uses conventional methods, and the aim of producing students with high-level thinking skills to tackle the challenges of the 21st century. The students have to develop the ability to think at a higher level to become competitive globally. The ability to think critically is also extremely important for students to survive and thrive in tomorrow's fast-changing work environment. Moreover, employees are required to equip themselves with the abilities to analyse, evaluate and integrate diverse sources of information to solve problems, as well as generate effective ideas for possible solutions (Richard & Rebecca, 2010; Soon &Choon, 2019). Therefore, it is believed that a teaching method that combines conventional methods with ICT integration is appropriate for bridging this gap.

Akyüz and Samsa (2009) studied the effects of mixed learning environments or blended learning environments based on the development of students’ critical thinking skills. The results show that if students have enough time and smooth access to computers, the learning environment can support the critical thinking of the students. In another study, Yang et al. (2012) examined the effectiveness of integrating critical thinking into listening and speaking skills courses in English. They used a virtual learning environment known as Moodle tools. They found that participants attending treatment or language clinics could improve listening and speaking skills in English as well as thinking skills, except for open-minded thinking.

In line with the goal of developing the HOTS of the pupil, innovation of the teaching methods of the teachers and the learning methods of students are very important. The innovation and integration of web technologies (ICT) in the delivery of learning methods has given rise to a form of learning known as blended learning. Blended learning or mixed learning, a hybrid learning model that combines face-to-face instruction with learning activities using online-mediated instruction, has received special attention lately (MuhamadAzharStapa, Mohamad Ibrahim &AmriYussoff, 2017). The diversity of methods and the use of technology in implementing learning activities can greatly increase the engagement or interest of students. The Masalela (2009) study finds that self-directed blended learning can develop critical thinking skills and encourage students to become independent thinkers.

Kurubacak (2007) also conducted research through project-based online learning (PBOL). This e-learning model is used to improve students' critical thinking skills through a reusable learning object (RLO) from online sources. PBOL can allow online students to reuse digital learning resources. Students become involved in reusable activities that require critical thinking and problem solving. Therefore, in a PBOL environment, students can find logical strategies and specific procedures for generating RLOs. Research findings also demonstrate that they can equip themselves with critical and creative thinking.

Meanwhile, by learning through a computer system (conference system), students who focus on issues discussed can critically review the issues based on facts and evidence (Cheok&Wong, 2016). According to Songkram (2015), blended learning as a combination of face-to-face formats and web-based formats offers a sufficient environment to support students’ generic skills and thinking power. Another online e-learning model known as online discussion was designed by De Leng et al. (2009) to test online students’ thinking skills with regard to basic science topics. They used Garrison's Practical Inquiry Model of Cognitive Presence (GPIMCP) to
assess the quality of content discussion and analysis. Results indicate that GPIMCP is a useful e-learning model structure for facilitating discourse on topics involving thinking skills in peer groups.

In an e-learning environment, web-based simulation is an online tool designed by Honebein (1996) to foster students' thinking skills. Salleh et al. (2012) have been using web-based simulations to examine the effectiveness of simulations on critical thinking skills. The results show that simulation learning has a positive effect on the development of students' critical thinking. Another model used by Burgess (2009) to examine critical thinking among the community of students using online learning reveals that online communication methods, such as chat boards and discussion, are more interesting compared to electronic communications. These tools have the potential to be an important means of improving motivation, as well as the desire to learn and think critically. In fact, the blended learning environment is rich with tools to support the students' generic skills.

Based on the above description, it is clear that the teaching of the moral education subject should be more responsive to meeting the needs of the generation of digital technology-oriented students (NadarajanThambu, 2019). At the same time, HOTS are the foundation of human capital success. Although many studies have been done on moral reasoning (Chang, 2007; Colby & Kohlberg, 2011; Jeevajothi, 1997; NadarajanThambu, 2017; Nadarajan & Vishalachee, 2014; Shasitharan Raman Kutty & NadarajanThambu, 2017), studies on the contribution of mixed learning (combination of face-to-face formats and web-based formats) to developing thinking skills among moral education students are still limited. Therefore, this study aims to explore the advantages of blended learning methods in developing HOTS in moral education students in secondary schools.

2. Method

A qualitative approach was applied to obtain empirical data in order to answer the research questions. A purposive approach to sampling was undertaken by the researcher. A total of 14 students, including male and female students of Chinese, Indian, Indigenous and Iban ethnicities, were chosen as research participants for data collection purposes. Refer to Table 1.

Table 1: Number of Participants

<table>
<thead>
<tr>
<th>No</th>
<th>School</th>
<th>Class</th>
<th>Students in the Class</th>
<th>Students in Focus Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SMK Sun</td>
<td>4 Alfa &amp; 4 Creative</td>
<td>27</td>
<td>7</td>
</tr>
<tr>
<td>2.</td>
<td>SMK Moon</td>
<td>4 Sinus &amp; 4 Inovatif</td>
<td>25</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The number of students used to collect data 14</td>
</tr>
</tbody>
</table>

Researchers have used the blended learning environment to implement the teaching of moral education in a form four class. Teachers use 1 hr 20 min to conduct one lesson per week. Each lesson starts with set induction steps, lesson development, class activities, assessment, and closure and reflection. In this teaching method, the teacher integrates traditional teaching methods and discussions with learning activities using online technology tools. Refer Figure 1, to view the procedure for this study.

![Figure 1. Procedure for this study.](image-url)
As a means of data triangulation, this study used multiple ways of obtaining qualitative data as recommended by Bogdan and Biklen (2007). The content validity of the instruments was assured through comments and critiques from three qualitative experts in moral education and blended learning pedagogy. Meanwhile, in method triangulation, data were compared across the results of the observations, interviews and journal writing. The thematic approach, as introduced by Braun and Clarke (2006), was used for data analysis. Findings were categorized according to several themes.

3. Findings and Discussion

Findings

The blended learning method has been used as a strategy for teaching moral education subjects in a form four class. Various online teaching tools such as Google, YouTube, Padlet, Prezi, Blendspace, Kahoot! AndQuizizz were blended with conventional face-to-face teaching, discussion techniques, interactive lectures, mind maps and acting. The data obtained from the study were used to analyse the thinking skills of each student who was involved in the process of learning moral education through blended learning. Data analysis identified four themes that focus on the Higher Order Thinking Skills (HOTS). These four key themes are supported by several subthemes. The four key themes are the:

1. Ability to apply moral skills;
2. Ability to analyse moral issues;
3. Ability to evaluate moral decisions; and
4. Ability to create instructional materials based on moral content.

All the abilities and thinking skills of the participants are shown and explained in Figure 2 below.

4. Discussion

Ability to apply moral skills

In this study, all the informants demonstrate that they developed the ability to apply moral skills such as respect for family members, their obligations towards family and their duties as a family member to solve family problems. The interview results show that participants can apply all the knowledge, experience and moral skills that they learned before to solve the moral dilemma which was given to them. Using conventional and online
learning methods enabled them to use the information obtained in a new way to solve a new problem that arose in the family. Some informants stated that:

“We realize that in the given dilemma, the main problem in the family is the lack of understanding among family members. Using the knowledge and moral skills we have, our group members produced a video about ways to respect family members. This video clip is able to illustrate how each family member shows respect for other family members. Our group leader wrote a script for this act and other group members played the situation well. We use Screen-o-Matic application to create this. This video clip was uploaded on YouTube”. [Informants, 2,4 - smk sun].

Meanwhile, students’ journal entries and our observations also confirm that the blended learning method is an effective approach for adding value to the learning environment through the incorporation of online teaching resources. Online support and resources foster meaningful learning environments. In this study, students were able to apply moral skills through ideas and experiences they gained from textbook reading, browsing the internet and watching movies or drama on YouTube. All these online tools were supportive resources that helped them to construct and write scripts for plays during class activities.

In support of the statements above on the strengths of application ability, informants 1,3 expressed that:

“Today I played a character that honours my father and mother. I greeted and thanked my mother (one of the characters in our play) who served the rice for me. I got the idea to play this character as such by watching movies and YouTube video clips to learn their acting style and moral skills. I just rebuild and apply the moral skills like greetings and respect while acting in the play in the class”. [informants 1,3 - smk moon].

The above response indicates that students can demonstrate the ability to apply moral skills as a foundation for increasing the level of their thinking skills. They can use technology to support the learning process and the need to develop Higher Order Thinking Skills. The participants of this study were able to make and produce a video clip to explain the value of respect and obedience to family members. This video clip can also be used as a resource in set induction steps, stimulating material in lesson-development steps and as a stimulus for student reflection.

This study shows that blended learning emphasizes student-centred activities and students are given the opportunity to actively engage. Teachers act only as moderators or facilitators. The involvement of students in hands-on activities can directly empower students’ thinking skills and cognitive abilities. Students applied all the learned information and knowledge on moral skills to solve a problem. These findings agree with the study by Budihartini et al. (2015) which found that utilization of blended learning environments can develop school students’ critical thinking skills and their cognitive abilities.

Ability to analyse moral issues

Regarding the ability to analyse moral issues, the interview results show that the participants were able to identify the moral issues or problems given by simplifying complex situations. Participants could identify the issues presented in the video clip shown during their induction set by the teacher. The teacher showed video clips when teaching the topics related to values called ‘rational’ for Form 4 students (Unit 11 – Mature Thinking, Wisdom Acting). This video clip was downloaded from YouTube.

This YouTube video clip is about the issue and the causes of teenagers running away from home. After the showing of the video, the teacher has a question for the participants to test their understanding of the message delivered. Participants could express the message and their responses clearly. Their responses indicate their level of thinking. An example is from the following interview:

“Yes, for me, it is another moral issue in our society, and of course the video show could stimulate our thinking ... and encourage formal learning. I can think of the advantages and disadvantages of teenagers running away from home. I think parents need to watch them ... if teens run ... they are also losers. Parents are also ashamed ... the government needs to address this problem. The government and the police need to analyse the causes of the issue or problem morally”. [informants 1,5 - smk sun]

Similarly, informants 6 and 7 also agree with the above statement. They said that:

“I can analyse the moral issue in the video show. This is the story of teenagers running away from home. I can see teenagers like to run away from home ... because of family factors and friends or boyfriends. We have to
look into the causes of the teenagers running away from home and try to control the problem, so it does not get worse. I think the government in Malaysia needs to be aware of this situation and prevent this moral issue before it becomes severe”. [informants 6,7-smk moon]

In addition, students’ journal entries also indicate that participants understand the importance of identifying issues in some situations in order to proceed with the analysis. Participants are able to evaluate the issues raised in a video to determine the cause of a conflict that arises in a community. The arguments and ideas from the participants clearly reveal that all of them have analytical thinking skills, especially when analysing moral issues. This is evident in the following journal entries:

“I can see the moral issue in this video. The video clip in this set induction stimulated me to evaluate the culture of Malaysian society, especially our teens. I think teenagers cannot judge the good things and the bad things in their lives. The video clearly shows that teenagers are not good at comparing and differentiating favourable behaviour and harmful behaviour. Their attitude, such running away from home, is immoral action, rude and uncontrolled, and it can be classified or categorized as primitive and uncivilized behaviour”. (informants 3,6,7-smk sun)

“I watched the video clip. The issue is clear. In my opinion, running away from home needs to be analysed by teenagers themselves. They need to be able to see and distinguish the effects and consequences of teenagers running from home to themselves, families, communities and countries. I can compare that there are many adverse effects on girls from boys. If there is no place to live and money to buy food, the boys might steal but a female student may become a victim of prostitution”. [informants 2,4,5-smk moon].

The observational report also shows that the participants were able to highlight the moral issues that were being presented, whether the issue was related to individuals, families, schoolchildren or communities. They were able to categorize the moral issue to find the right idea for a solution. The idea of the settlement was also presented in a verbal question-and-answer session by the participants together with the teacher. Participants could also come up with solutions to the issue of running away from home during the reflection session. Regarding that issue, participants could analyse video shows, evaluate messages delivered, and investigate and predict good and bad effects on teenagers and families. The findings are in line with the studies of Shasitharan Raman Kutty and NadarajanThambu (2017), who confirmed that students are not only watching videos in flipped or blended learning classrooms but critically thinking about the moral issues.

In addition, students also demonstrate analytical skills, such as investigative skills, and explore moral issues as they actively use various learning instruments such as online learning, case studies, role play, video-watching or cooperative discussions. The interviews indicate that participants investigate and analyse the topics or learning unit that teachers present. Students are introduced to topics via online lectures and participate in online reading. An analysis of these topics or learning unit is considered important by participants as they realize that moral values are delivered through them. Participants use prior knowledge from this learning unit to investigate the importance of the values discussed in the topic on human life. In this scenario, students are no longer passive recipients but active thinkers. Students also continue their investigations to determine and select the important and valued relationships discussed in the learning unit for their daily lives. Investigation is also conducted by participants in set induction, lesson development and class activities. Below are some examples from interviews:

“Videos selected by the teacher in the set induction steps are interesting, fun and suitable … Teacher was teaching Unit 13 entitled ‘They Love, We Love’. Message from this video can clarify the teaching lesson that parents’ make huge sacrifices for their children. Therefore, children should love their parents. Messages in the video that children should thank and be grateful to parents can be … linked to the learning unit. Our investigation shows that the story in this video can explain the value of affection for the family” [informants 5,6,7-smk sun].

“Teacher used Padlet in teaching the content of Unit 13 - ‘They Love, We Love’. We were asked to create a poem on the theme ‘Parents’ Sacrifice’ and upload the poem in the Padlet media provided by the teacher. Each group’s poem is displayed through the LCD projector for all viewing. We were asked to investigate and evaluate each of the rhymes and whether or not the poems are appropriate for the theme given in the learning lesson. It was fun and interesting …” [informants 1,2,3-smk moon].

In addition, participants’ journal entries also show that online tools, such as Padlet, Moodle, Edmodo and Blendspace, are able to stimulate the thinking skills of the participants. Participants claim that they can easily investigate and make judgments about an issue in the classroom with the help of Padlet media and Blendspace.
Online tools offer students opportunities to develop, apply and receive feedback on problem solving. An example is from the following journal entry:

“In lesson development steps, the poems evaluated in Padlet were challenging my thinking. I had to break down and investigate this poem first line by line to understand the meaning. After that I evaluated whether the poem meets the theme proposed in the learning unit. The display of several poems simultaneously via Padlet makes it easier to compare and differentiate the strengths and weaknesses of each poem. Padlets make it easy for us to think and make comparisons easily and quickly” [informants 2,3-smk sun]

Observation notes also point out that the use of inflectional learning tools such as Padlet, Moodle, Blendspace and Google can create an atmosphere of active learning in the classroom. Participants, for example, surf the internet (Google) to investigate how to write poems. The display in the Padlet also facilitates participants’ discussion and evaluation of the rhymes displayed. Additionally, ICT-based assessments such as online games (Kahoot! and Quizziz) can also test students' thinking and understanding. Students’ participation in online discussion, forums and reflections also facilitate their constructive thinking. Students can analyse and evaluate the facts and questions that are presented before giving answers. These findings agree with the study of Mulyani et al. (2017), who admit that the right connections between technology and moral issues enhance students’ analytical abilities. Utilizing online tools in blended learning stimulates students’ thinking skills through interpreting and analysing moral issues.

**Ability to evaluate moral decisions**

Moral decisions refer to judgments that have moral content. The ability to evaluate moral decisions is the ability to evaluate and judge between right and wrong. The interview results show that students can evaluate moral decisions by providing a reason before completing an assignment, such as answering the teacher's questions in the set induction steps, solving problems in carrying out class activities and considering the reasons before giving an answer in the online assessments, such as quizzes and forums. When teachers handle set induction, lesson development, class activities and assessment, participants always demonstrate the capacity to make decisions by giving the proper reasons for them. In this regard, informants 1, 4 and 7 stated that:

“The usage of video in set induction steps requires us to take into consideration whether the issue highlighted can explain and expand the learning content. This consideration is important because if the video shown by the teacher is not suitable for the content and objective of the lesson, it does not help the student to understand the content of the lesson and the values being taught. I think the video show simplifies the moral content and teaching activity”[smk sun].

Similarly, informants 5, 6 and 7 described the reasoning skills in the moral class activity:

“Additionally, the brainstorming technique used by teachers in discussing the value of affection for the family also gives us the opportunity to give reasons for the honour of the parents being respected and loved by children. In family issues, we can compare the good attitude of the child and the bad attitude of the child towards their parents. Activities such as searching for articles on the internet about family issues motivate students to be self-dependent thinkers” [informants 5,6,7-smk moon].

In light of this, the results of journal entries also indicate that students are used to evaluating situations and courses of action through people’s behaviour. Participants state that they will consider the rationale for action that needs to be taken before performing an activity or responding to online quiz questions. Informants 2, 3 and 5 asserted that:

“In our brainstorming activities, we have to find a picture that shows the atmosphere of a happy family. We downloaded this picture or portrait of a family from one of the popular blogs. And then we are required to list a positive impression if every member of the family has the value of affection. I give reasons for the importance of love in a family. I explain how a brother can help his sister solve mathematical problems. Suggestion activities require us to take precedence before giving answers. After that we have to create a mind map in PowerPoint software or Edmodo related to this topic”.[smk sun]

In line with the above statements, the observation notes suggest that participants intended to show their skills in reasoning, evaluating and critiquing the issues discussed through set induction, lesson development, class activities and online assessments. Participants can assess and associate video views in induction sets with the teaching unit. They also take into consideration and give the reasons for the importance of love through activities in the classroom. In closing and reflection sessions, students also criticized the attitudes of children who do not
love their parents. In the assessment steps, participants evaluate and assess each question raised in Quizziz. Participants also conclude teaching topics by building mind maps through the Microsoft Visio and Edmodo app and do their presentations in the class.

Thus, this study agrees with Ngadmid (2019) that blended learning can create a learning climate that is able to stimulate students’ ability to evaluate moral decisions. Blended learning totally transformed this class, and it was amazing to see how much the students were learning and how blended learning facilitated critical thinking skills.

In addition, students also demonstrate assessment skills such as judgmental skills through a number of activities implemented through blended learning. The interview results from the informants show that the students have the ability to judge, assess and calculate the moral issues suggested by teachers in the lesson. This can be seen in the five instructional steps used by the teacher: set induction, lesson development, class activities, assessment, and closing and reflection. Students participate in online discussion about current moral issues among teenagers. This discussion indicates that learners (participants) move from learning to thinking about what they learn. For example, informants 5 and 6 explain that:

“Ok … for me … I can judge and think better. I am a believer now. I need to assess whether the video material used in the set induction steps is appropriate or not for the teaching unit. While in the assessment step, I also need to understand the purpose of the question, evaluate the answers as either correct or false, and present the outcome of the discussion in front of the class. I also need to assess the importance of love in the daily life of the student. I realize that teaching using ICT can increase learning interest”[smk moon].

Furthermore, journal entries from participants also indicate that they have some skills in making judgements. Informants 3 and 5 expressed that:

“In teaching about the value of tolerance, I can estimate the video titled Our Belongings. This video message can reinforce the teacher's teaching content about the value of tolerance. This video shows the tolerance value between various races in Malaysia. The value of tolerance can be seen when all races, regardless of religion and belief, live on the theme of independence and racial unity. The message from this video confirms that unity and tolerance among various races in Malaysia still exists. I can see that unity exists because Malaysian society holds the national ideology ... Rukun Negara”.[smk sun].

The views of the informants and our observation confirm that the blended learning method encourages participants in the assessments to evaluate, judge, assess, consider, criticise and give a reason for whatever hands-on work they do in the classroom. Participants in this study made evaluations on moral judgments in the video messages displayed in the set induction. Subsequently, participants sought evidence and examples of activities that fostered racial unity in Malaysia through Google search. These acquired materials were then shared with other partners via email to be considered by them. The material was also exposed to criticism. Upon approval of the evidence, material and samples of the activity were sent to the teacher via WhatsApp. Overall, blended learning can develop higher level thinking skills, and participants can offer criticism and judgments before making a decision to resolve an issue. These findings are in tandem with the work of Tan (2019) which demonstrated that blended learning strategies can help make thinking processes more visible of higher-order thinking and build moral thinking about justice and fairness (Thambusamy&Elier, 2013).

Ability to create instructional materials based on moral content

In view of the foregoing, this study found that participants developed the ability to create and produce teaching materials that have moral content. They show their planning skills before performing a task such as creating a play or mind map. Planning and designing skills can be observed in their class activities. Specifically, informants 2 and 4 express their views on skills such as designing and planning:

“Our group is required to prepare a time management table in this Unit 4. We are... required to upload or build indoor tables provided in the Padlet app. We have ... planned ahead before producing the schedule. In preparing this table, we also often reorganized and combined several elements to produce a good time table. Once a member of the group was satisfied, we sent a representative to construct the table in the Edmodo media and we do our presentation” [smk sun].

Evidence from the interviews conducted show that participants demonstrate the ability to plan and create a new product. Informants 6 and 7 said that:
“Our group is given the task of acting on a situation that shows smart individuals who manage time. I am the leader of the group and planning the storyline and defining the appropriate characters to act. I have also given assignments for each student and ask them to hold the rules of right conduct. There are students who become actors, script writers, props managers, directors, makeup artists and prompters. This play was successful because we planned well. We recorded this play and saved it on CD for use as teaching and learning material during our Teaching Practice” [smk moon].

In the meantime, journal entries also show the participants really planned before performing an activity. According to informants 1 and 3:

“As a leader, I am responsible and make up a plan for our group's work. In acting, characters, scenes and storylines should be built and planned to make the acting more effective. We will plan and design agendas and events that should be included so that they fit the theme and topic of teaching”[smk sun].

In line with the journal entries, the observation report also shows that participants made a neat plan before making the assignment available. They planned in groups to build a time management table in Padlet and Edmodo. Thereafter, the participants also planned and produced a play that portrayed the situation of an individual who manages the time wisely. Planning using the blended learning method became one of the most important tools for creativity.

The findings are synonymous with the studies conducted by de Ruisseau (2016), who found that blended learning methods make classroom teaching more dynamic and meaningful. Various types of technology in the blended learning environment enhance thinking, reasoning and inquiry skills that lead to critical and creative thinking.

At the same time, students also demonstrate idea-generating skills through several activities implemented via blended learning. The results of the interviews show that participants are able to generate ideas in set induction steps, lesson development, class activities, assessment, and closure and reflection. In the interview sessions, informants 2 and 3 agreed that:

“We have also succeeded in producing a play that shows the love or affection in a family. This act we then uploaded to YouTube. We are delighted to be able to create a short drama and upload it on YouTube. This short drama can be used as a stimulant material in set induction by a teacher who wants to teach a topic on affection”[smk moon].

Participants' journal entries also prove that participants generated notes on the lesson development steps. Informants 1and 3 said that:

“Our group generates additional notes that are tailored to the learning topic ‘Unit 9: Knowledge of Living Prosperity’ that discusses the value of affection. Notes related to the importance of science for the development of technology and human civilization were created in the form of PowerPoint presentations before being uploaded in Edmodo media. This note is displayed in class during the discussion of this topic” [ smk moon]

In the same vein, the observation report also reveals participants of the study generating various ideas when carrying out the assignment in class activities, assessment, and closure and reflection. During ‘Unit 13: They Love, We Love’, students could design a greeting card for their parents. In this activity, students could combine words and paintings to express love and appreciation for their parents. Students are given the opportunity to create this greeting card through Microsoft Office Publisher and Photoshop applications. In addition, in the assessment step, students could build and produce quiz questions through the Kahoot! app. Finally, in the closure and reflection step, students are able to reconstruct all the elements learned on the topic of Unit 13 to generate a play that illustrates the value of family affection.

Participants can also summarize the whole content of teaching while reflecting on it. It turns out that this generation aspect is an important feature in the level of thought of creation to facilitate constructive thinking. The findings are congruent with the research conducted by Al-Zahrani (2015), who found that active learning through technology in blended learning stimulates knowledge building, thoughtful analysis, confidence in problem-solving abilities and higher thinking skills.
5. Conclusion

Students have to develop the ability to think on a higher level to be competitive globally. Conventional learning methods need to be redesigned to accommodate the needs and ways of learning of Gen-Z. In this connection, online tools like Google, Prezi, Mindmeister, Padlet, Quizziz, or Kahoot! (Mohamed Amin Embi, 2018) are complementary tools to traditional learning methods. These online teaching tools assist students in acquiring Higher Order Thinking Skills (HOTS). Blended learning stimulates more interactive teaching, emphasizes active learning and provides creative thinking and learning experiences for students in secondary schools. Students are given the opportunity to be actively involved in the teaching and facilitating process. They are given the opportunity to share knowledge, use software or online tools, and share experiences with other students. This research found that blended learning assists students in exhibiting creativity and in producing engaging lessons and activities. It promotes HOTS in moral education students in secondary school.

6. Acknowledgements

We wish to acknowledge the Ministry of Education, Malaysia, and Research Management & Innovation Centre (RMIC), Sultan Idris Education University [File No: 2018-0041-107-01/GPUBP] for the research grant enabling this study to be carried out.

References


