The Influence of Wayang Beber (The Legend of Wasis Joyokusumo) as a Character-based Learning Media on Students' Critical Thinking Ability

Luthfa Nugraheni
Sebelas Maret University Surakarta, Indonesia, *luthfanugraheni@student.uns.ac.id*

Suyitno
Prof., Sebelas Maret University Surakarta, Indonesia, *suyitno52@staff.uns.ac.id*

Herman J. Waluyo
Prof., Sebelas Maret University Surakarta, Indonesia, *hermanjwaluyo@staff.uns.ac.id*

Nugraheni Eko Wardani
Dr., Sebelas Maret University Surakarta, Indonesia, *nugraheniekowardani_99@staff.uns.ac.id*

Critical thinking ability and character education seem to be interesting educational topics that are being discussed in the digital era of 21st century. It is necessary to optimize the character education in the learning process earlier using various learning media. The aim of this study is to investigate the influence learning process of legend story the theme of "obligation and right me" using the a character-based media of *wayang beber* (the legend of *Wasis Joyokusumo*) on the students' critical thinking ability. This study is quasi experimental research using post-test only non-equivalent. The samples or participants are two classes in Pati city, namely SD Ngepungrejo 01 Pati as the control class with 36 students and SD Payang 2 Pati as the experimental class with 38 students. Cluster sampling is a technique used to determine the research subject. The data then collected using several techniques, namely observations, interviews, tests, and document analysis. In analyzing the data, descriptive and inferential statistical analysis methods are implemented. In this case, the content validity and construct validity are utilized to test the internal validity. The external validity is tested using try out test of instruments on the sample of study. The validity and reliability tests are implemented. After that, the questions are eligible to be used to obtain the data. The conclusion of study is that the implementation of *wayang beber* as a character-based learning media influences the students' critical thinking ability because the significance value is less than 0,01.

Keywords: learning media, wayang beber, the legend of wasis joykusuma, character, critical thinking ability

INTRODUCTION

Nowadays, the critical thinking ability becomes an interesting topic in educational field (Ling & Loh, 2020; Carbogim et.al., 2019; Chalkiadaki, 2018; Kleinig, 2018). In the 21st century, students are expected to be able to solve every problem critically and creatively (Kim et.al., 2019; Muskita et.al., 2020). They are required to be able to solve problems critically using analytical ability which considers various logical and innovative things. Thinking critically and creatively is the skill needed in the 21st century (Bialik & Fadel, 2015; Ling & Loh, 2020; Muskita et.al., 2020).

Problems in the 21st century related to critical thinking ability and character education have become great educational topics in Indonesia (Supena et.al., 2021; Warsah et.al., 2021; Rahardjanto et.al., 2019; Parwati et.al., 2018). Those problems have also become global issues in international community (Styers et.al., 2018; Bart et.al., 2018; Sahoo & Mohammed, 2018; Liu et.al., 2018; Ling & Loh, 2020). The highlights of critical thinking ability integrated with character education are interesting topics that need to be studied in learning process (Panlunussa, 2013; Rochmad et.al., 2018; Affandy et.al., 2019; Andriany, 2019). The moral decline of teenagers is due to the weakness of cultural and character education which is emphasized in both formal and non-formal educations (Hidayati et.al., 2020). Religion, *Pancasila*, culture / local wisdom, and national education goals are the sources of character education values; so it can be developed in Indonesia (Puskurbuk, 2011: 3). The implementation of character education in primary and secondary schools can be integrated through the learning media or another learning sources (The Character Education Team of the Directorate General of Higher Education, 2011). One of local wisdoms in surrounding community can be utilized as a learning source to foster students' critical thinking ability. In this case, the primary and secondary schools have to be able to integrate the character education which is derived from the local wisdom of surrounding community to be used as learning media to instill the skills needed in the 21st century, one of it is critical thinking skill (Supena et.al., 2021). Mastering critical thinking ability in the 21st century and having character value are being highlighted. Students are required not only to have critical thinking ability but they must also have good character value (Andriany, 2019). The character forms human's personality that shows his attitude, speech, and behavior in his life (Bart et.al., 2018).

One of problems that is engulfing the education world is related to the dimension of morality which should develop in synergy with critical thinking ability (Rochmad et.al., 2018; Affandy, et.al., 2019). The development of critical thinking ability should be balanced with good character value and behavior (Panlunussa, 2013). In fact, the students have critical thinking ability. However, they are so impolite and lack of moral values (Rochmad et.al., 2018). On the other hand, the young generation tends to be familiar and enjoy the various games on the internet, cellphones, and another electronic devices. Less socialization of cultural traditions to young generations results in low understanding of traditions which are full of character values (Hidayati et.al., 2020). Basic human values such as togetherness, compassion, respect, honesty, and hard work are decreasing (Pratiwi, 2018). This condition is caused by educational orientation

which emphasizes the cognitive aspect only. The benchmark of success in education is only represented by the test scores (Ahmadi, 2017). It should be oriented to the students' development, in order to maintain and improve humans' dignity and their cultures to glorify God (Lickona, 2014). A balanced education is needed which provides knowledge, skill, attitude, and good moral values for students, it does not only provide academic ability (critical thinking) (Rochmad et.al., 2018; Affandy et.al., 2019; Andriany, 2019).

The research issue on character education has led to character lerarning in which the character values come from the national cultures and local wisdom values (Parwati et.al., 2018; Hidayati dkk, 2020). Some previous researchers consider that character education derived from the concepts of law, religion, personality psychology, and social relationship shows results that are not maximized and do not preserve the local cultural wisdom (Bart et.al., 2018; Jeynes, 2019). Character education based on the concepts of local wisdom has not been widely explored by previous researchers, especially regarding to *wayang beber*. It needs to investigate and explore the existence of local culture as a continuation of character education through local-culture-based media (Pratiwi,, 2018) such as the legend of *wasis joyokusumo*. This study is important to be carried out to know the the influence of *wayang beber* (the legend of *wasis joyokusumo*) as a character-based learning media on students' critical thinking ability.

The educational institution, especially primary schools are viewed as strategic places for inculcating culture, national character, and developing critical thinking skill (Ahmadi, 2017). It is intended to make students have the concepts of critical thinking skill in their attitudes, words, and behavior which reflect good and strong character (Desmita, 2017). In this case, learning is one place for media to develop critical thinking skill and character (Anitah, 2019; Danim, 2019). *Wayang* (puppet) as learning media is expected to instil students' character and teach them to think critically through problems in its stories (Salamah, 2017).

A study by Wulandari (2015) about the influence of *wayang* media on students' storytelling skills shows that there is a significant influence, however it has not been viewed from the aspects of critical thinking ability and character inculcation. Research by Salamah (2017) concerns the implementation of *wayang* media to improve the students' learning outcomes in primary school. It focusses on the media to improve the learning outcomes, it has not been discusseed the influence of it on students critical thinking ability and characters. Parwati et.al. (2018) have conducted research about the integration of character education based on local wisdom. It has not discussed about the media and critical thinking ability. A study by Pratiwi (2018) shows that *wayang profesi* as a learning media based on local wisdom for primary students, it has not connected its effect on critical thinking ability.

Suharyono (2018:7-8) states that there are three important reasons in studying *wayang beber*; first, it is a rare cultural art and has symptoms of receding development towards death; second, the informants and experts of puppets who have understood the *wayang beber* are the old, so it needs to preserve *wayang beber*; third, it is necessary to promote puppet-based learning as the national identity.

As a cultural asset, *wayang beber* needs to be passed on to the younger generation in strengthening the identity and resilience of the national culture, however *wayang beber* has experienced a decline in its existence (Hendi 2019). It is not impossible that *wayang beber* and its values will be lost because it is not introduced to the younger generation (Salamah, 2017). *Wayang Beber* has an important meaning in national life and cultural field (Hariyadi et.al., 2018). Puppets have been recognized as educational tools because it is able to integrate art, communication, and persuasion; it teaches critical thinking ability through the stories in it. The love of local culture is a way to increase cultural resilience (Mulyono, 2018).

This study is unique because it focuses on the influence of *Wayang Beber* (the legend of *wasisjoyokusumo*) as a character-based learning media on students' critical thinking ability.

Theoritical Review

Students should have critical thinking ability because in the 21st century the technology and economy are developed rapidly; it required them to be able to consider the information which they obtain and think about its impact for them and their surroundings (Syawaludin et.al., 2019; Saputri et.al., 2019; Sulisworo & Syarif, 2018). Therefore, instilling critical thinking needs to be carried out, so students are able to overcome various problems that occur in everyday life (Heriyandi, 2018). With good critical thinking ability, students will not easily accept something, but they can also take responsibility for their opinions with logical reasons (Isnawati et al, 2020). Critical thinking ability makes students are used to be rational in determining and choosing the best alternative choices for themselves (Kahlke & Eva, 2018). Because it is important to instil critical thinking ability, it has to be given to children from an early age (Persky et.al.,, 2019).

Hunaidah et.al. (2018) state about critical thinking ability as a process that is used to concept, implement, synthesize, and evaluate the information which is obtained in reflecting, experiencing, and observing. It is carried out to take the best action needed. Students have to have critical thinking ability to drive them to be able to determine the solutions to the problems faced (Heryandi, 2018). Critical thinking aims to make students to be able to transfer abstract principles by implementing it in everyday life. Moreover, they will be able to collect and assess relevant information, generate conclusions, and solve problems with good reasons (Kleinig, 2018).

According to Facione (2011), critical thinking ability consists of some aspects such as interpreting, analysing, inferencing, evaluating, explaining, and self regulating. This ability is important and needed by students to solve their life problems in the future. It is a directed and clear thinking process that has a major influence on an individual's mental activities such as solving problems, making decisions, analyzing assumptions, and conducting scientific research (Rahardjanto et.al., 2019). Problem solving requires accurate data to produce logical and appropriate decisions or solutions in which good critical thinking ability is needed as basic skill in analyzing existing data (Warsah et.al., 2021).

Besides critical thinking ability, the instilling of character education is also necessary, so students' academic development is balanced with it by integrating the learning media (Affandy et.al., 2019; Andriany, 2019). It means combining, incorporating, and implementing good and true values to form, develop, and foster students' character or personality in the teaching and learning process (Rochmad et.al., 2018). Therefore, every learning material is presented using media which is expected to contain the values of character education.

According to Lickona (2018), character refers to a series of attitude, behavior, motivation, and skill. It is closely related to a person's personality. Vela et.al. (2018) state that it is a person's natural behavior in responding to the situations which is manifested in concrete actions such as good behavior, honesty, responsibility, respect, etc. Pratiwi (2018) defines national character is as a condition of character which become the national identity.

Character education is a system of instilling character values which includes components of knowledge, awareness/willingness, and action to apply it towards God, oneself, others, the environment, and nation; so they becaome human beings. Mulyasa (2014) states that character education is not only related to the right and wrong things, it is also related to how to instil habits in life so that students have high awareness, understanding, and commitment to implement goodness in life.

The implementation of character education derived from local wisdom is an absolute thing to do at any level of education (Mungmachon, 2012: 174). It is because the character education is the main foundation for the development of younger generation; it also maintains the local wisdom values. Mislia & Darman (2016) state that the most common strategies used in building students' characters are intervention, modelling, habituation, facilitation, reinforcement, and the involvement of other people.

Discussing about the character education derived from local culture, the people in Pati regency have a relatively popular local wisdom named *Wayang Beber* which can be utilized as learning source in character education. *Wayang Beber* is a type of puppets performance using pictures as its object (Mulyono, 2018). Those pictures are depicted on a piece of paper or cloth in which the picture is made from one scene to the following scenes sequentially based on the stories (Suharyono, 2018). *Wayang Beber* contains moral values that can be used as a source of inspiration for the young generations in facing challenges include globalization that tends to omit the national identity and local culture (Suharyono, 2018). One of strategies that can be used to preserve and develop *wayang beber* as a learning media is by incorporating it into the subject matter especially the materials in primary schools.

The sacred nature of *wayang beber* can be viewed from the way it is stored, the place to store it, and the ceremonies of it (Warto et.al., 2011). Local wisdom is understood as local ideas that are full of wisdom (Hidayati, 2020). It is actually the results of local community intelligence (local genius) in interacting with their surrounding. The elements of regional culture become potentially local genius because it can survive until

this time (Pratiwi, 2018). The local wisdom can be in forms of values, norms, ethics, beliefs, customs, and special rules.

METHOD

Research Design

The research design is quasi experimental which implements posttest only non-equivalent. It uses two groups, namely control class with varied learning media and experimental class that implements *wayang beber* (the legend of *wasis joyokusumo*) as character-based learning media. Furthermore, both classes are given posttest (Sugiyono, 2011). The primary data collected is then processed and analyzed to determine whether there is an influence of *Wayang Beber* (the legend of *wasis joyokusumo*) as a character-based learning media on students' critical thinking ability.

The procedures of study include preparation stage, planning stage, implementation stage, observation stage, and evaluation stage; the follow-up stage consists of planning stage, treatment stage, and data analysis stage. The planning stage is carried out by compiling the learning tools. It includes preparing syllabus and lesson plans using *wayang beber* the legend of *Wasis joyokusumo* as character-based learning media. The last is to prepare research instruments in forms of data collection tools.

The treatment stage is a stage of giving treatment to the subject of study. It is also a stage in which the researcher takes data from the subject of study. This stage includes preparing research instruments (syllabus and lesson plans), implementing teaching and learning process (control class is given pictures learning media and experimental class is given a character-based learning media using *wayang beber* the legend of *wasisjoyokusumo*. The learning process is observed by three persons to monitor the implementation and influence of *Wayang Beber* (the legend of *wasis joyokusumo*) as a character-based learning media on students' critical thinking ability using observation sheets. There are six attributes of critical thinking, namely formulating problems, giving arguments, making deduction, making induction, evaluating, deciding and taking actions (Fisher, 2019). Moreover, post-test is carried out. The analysis stage is carried out after obtaining the data. It uses SPSS program version 16. Adapun indikator berpikir kritis dapat dilihat pada tabel di bawah ini.

Table 1
The indicators of critical thinking developed by Fisher (2019)

Critical Thinking Ability	Indicators	Characters
Formulating problems	Understanding problems, formulating questions that lead to investigation	Careful
Giving arguments	The arguments are based on the needs, it shows similarities and differences	Curiosity
Making deduction	Providing logical deduction, interpreting the individuals or groups appropriately	Cooperation
Making induction	Analysing data, making generalizations, drawing conclusions	Responsible
Evaluating	Evaluating based on facts, providing another alternatives	Honesty
Deciding and taking actions	Determining solutions, taking possible ways to be implemented	Respect other's opinion

Participant

The population of study are all primary students in Pati with the classification according to Sukmadinata (2007) urban, semi-urban, and rural schools. Moreover Sukmadinata (2007) argues that the selected samples should represent the total population because the results of study will be implemented to it. In this study, two classes are selected as the samples of study. The first class is SD Ngepungrejo 01 Pati. It acts as the control class in which 26 females and 10 males (36 persons) are the students. The second class is SD Payang 2 Pati. It is the experimental class in which 26 females and 12 males (38 persons) are the students. The two teachers who teach them have the teaching experience for 7 to 15 years. This study has obtained permission from Pati Education Office and the school which is agree to be the research subject. The agreement to be research subject is stated by the school principal, teachers, students, and parents who sign the Letter of Agreement to be the sample of this study. The cluster sampling is utilized in this study to select the research subject. They have the same characteristics, so they can be chosen randomly to represent it (Sugiyono, 2011). Furthermore, the group equality test is used to determine the control class and experimental class (Budiyono, 2004).

Data Collection

Techniques in collecting data are tests, documentations, questionnaires, and observations. Test is carried out by providing questions for students. It is used to obtain the data because it consists of several questions that can be utilized to assess someone's ability, knowledge, or intelligence in groups or individually (Budiyono, 2017). In this study, students' critical thinking ability related to skill mastery, attitude, and knowledge is assessed using test in form of essay.

The other technique in obtaining data is documentation. It is not only in form of field notes, but also in form of several school documents needed which related to the research

object. The data collected is the test scores of Indonesian language subject in the odd semester of 2020/2021 at fifth grade students. It is used to investigate the balance of students' initial ability in the population of study.

The questionnaire is used to investigate the students' and teacher's responses in classroom learning. It contains a description of students' characters that develop in their life. It is expected to be able to describe the general character of students in learning using character-based learning media (*wayang beber* the legend of *wasis joyokusumo*).

The last technique used is observation. Budiyono (2004) states that observation is carried out to investigate the research object directly and the activities in it. The observation sheets are used by the observer to examine the use of character-based learning media (*wayang beber* the legend of *wasis joyokusumo*) in the classroom learning. The observation object includes the entire teaching and learning process including teacher's and students' activities, and also the classroom condition during the learning process.

Data Analysis

The data analysis uses descriptive statistical analysis and inferential statistical analysis. Students' competences and characters are defined using the descriptive statistical analysis. The hypothesis testing implements the inferential statistical analysis. In this study, two-sample t-test is utilized to test the hypothesis using SPSS program version 16 in which the significance level (α) is 0,050. The prerequisite test such as Kolmogorov Smirnov test and homogeneity test is carried out first by using Levene's test. According to Budiyono (2004), H_0 is stated to be rejected when the probability significance (*Sig.*) < α (0,05) and H_0 is stated to be accepted when the probability significant is (*Sig.*) > α (0,05).

Validation of Data Accuracy

As stated previously, students' abilities are assessed using essay test. To ensure the quality level of questions, it needs to be tested first. Therefore, the feasibility test of it consists of validity test and reliability test. Before being used to obtain data, the test instrument is tested for validity and reliability to determine the quality of questions. Validity is defined as the quality of a test. According to Sugiyono (2011), it determines the test accuracy in measure the students' ability. It can be concluded that valid can be stated as be able to measure. Validity test is divided into two kinds, namely internal validity and external validity. It is utilized to determine whether the test is in line with the learning materials or not.

Internal validity is tested using content and construct validity. Content validity is related to the test items which represent the entire learning materials. In other words, it states whether the test includes a representative sample of behavioral domain being measured. Construct validity concerns whether the measuring instrument is in line with the indicator of concepts in the material being measured. It can be measured through expert review or being tested on a number of individuals outside the sample but still in the population of study. In this study, the expert review is utilized to test the construct

validity. In this case, there are 2 experts who are asked to test validity. They are the expert of learning media and language learning expert.

Sugiyono (2011) argues that the comparison between the existing criteria on instrument and the empirical facts can be used to test the external validity by trying out instrument on the samples. It can be measured by comparing student's score in one item (X) with the total score (Y) using correlation technique of Pearson's product moment.

Before the questions are used to obtain data, validity and reliability tests have to be carried out.

Table 2
Instrument Validity

Number of question	r count	r table	Conclusion
1	0.31360	0.3120	Valid
2	0.3010	0.3120	Invalid
3	0.31360	0.3120	Valid
4	0.3010	0.3120	Invalid
5	0.31360	0.3120	Valid
6	0.31360	0.3120	Valid
7	0.3010	0.3120	Invalid
8	0.31360	0.3120	Valid
9	0.31360	0.3120	Valid
10	0.3010	0.3120	Invalid
11	0.31360	0.3120	Valid
12	0.31360	0.3120	Valid
13	0.3010	0.3120	Invalid
14	0.31360	0.3120	Valid
15	0.31360	0.3120	Valid

Moreover, the value of r_{XY} is used in t-test. The t-test is utilized because the respondents are samples, so generalization is needed to represent all characteristics in the population (Budiyono, 2004). Moreover, it has to view the distribution (t table) for the significance level (α) = 0,05 and degree of freedom (dk= N-2). The test decision is when $t_{count} < t_{table}$ the item is stated to be invalid. When $t_{count} > t_{table}$ the item is stated to be valid. Although the questions is tested repeatedly (Arikunto, 2009), it is said to be reliable when it provides the same results in different times. The reliability test for test instrument and questionnaire items uses Cronbach's Alpha. The test instrument and questionnaire items are said to be reliable when the value of $R_{count} > 0,6$.

Table 3
Reliability

Cronbach's Alpha	Value of Cronbach's Alpha Based on Standardized Items	N of Items	Conclusion
0.66	0.63	10	Reliable

FINDINGS

Research Result

This study aims to examine the impact of *Wayang Beber* (the legend of *wasisjoyokusumo*) as a character-based learning media on students' critical thinking ability to learning legend story the theme of "obligation and right me". This learning media is implemented to the experimental class. It is the fourth grade of SD Payang 2 Pati with 38 students. The control class is the fourth grade of SD Ngepungrejo 01 Pati with 36 students who have taught using pictures media. The determination of both classes uses cluster sampling which has previously been tested for its balance on the entire population of primary schools at Pati in academic year of 2020/2021. To investigate whether there is an influence of *Wayang Beber* (the legend of *wasisjoyokusumo*) as a character-based learning media on students' critical thinking ability, the students' posttest results from experimental class and control class are compared.

Evaluation or assessment is a very important part in educational process. In character education, it has to be carried out properly and correctly. It does not only concern on students' cognitive achievement, but also their affective and psychomotor achievements. The character assessment is more concerned with students' affective and psychomotor achievements than their cognitive achievement. Even though, all of it has started with cognitive achievement first. Table 4 shows the results of character learning using the learning media of *Wayang Beber* (the legend of *wasisjoyokusumo*) at SD Payang 2 Pati and SD Ngepungrejo 01 Pati. (SD=primary school).

Table 4
The observation results of character education using the media of *Wayang Beber* (the legend of *wasisjoyokusumo*)

Character Education	SD Ngepungrejo	SD Payang 2	Description
Careful	13	19	Starting to Appear
Curiosity	17	19	Starting to Appear
Cooperation	22	24	Starting to Develop
Responsible	23	26	Starting to Develop
Honesty	22	25	Starting to Develop
Respect other's opinion	23	26	Starting to Develop

Descriptions :
HA = Have not appeared (1-9)
SA = Starting to appear (10-19)
SD = Starting to develop (20-29)
BH = Become a habit (30-38)

Based on table 4, the effectiveness level of four dimensions of the students' character include responsible, cooperation, respect other's opinion, honesty are in the category of starting to develop. It shows that these attitudes have been developed in students' life. While the attitudes of careful and curiosity are in the category of starting ro appear. It means that it has not been developed.

The data on students' critical thinking in classroom learning is obtained based on the results of written test in form of essays (posttest). The essay consists of 10 questions that include several aspects of character according to Facione (2013): interpretation, analysis, inference, evaluation, explanation, and self-regulation. The distribution results of students' critical thinking ability using a character-based learning media (*Wayang Beber* the legend of *wasis joyokusumo*) in the experimental class and varied picture media in the control class can be summarized in table 4.

Table 4
The distribution of students' critical thinking ability

Interval score	Frequency of Control Class	Frequency of Experimental Class
45-52	9	0
53-60	4	2
61-68	10	7
69-76	5	6
77-84	5	16
85-92	3	5
93-100	0	2
Total	36	38

The frequency of both classes can be viewed in table 4. The largest frequency of control class is 11. It is in the interval score of 61 – 68. The largest frequency of experimental class is 16. It is in the interval score of 77 – 84. Based on the data obtained, it can be concluded that the level of students' critical thinking ability in control class is lower than the students' critical thinking ability in experimental class. In table 5, it describes the results of students' critical thinking ability.

Table 5
The description results of students' critical thinking ability

Statistical Results	Control Class	Experimental Class
Mean	64,92	76,84
Standard Deviation	12,13	8,87
Variance	147,164	78,731
Minimum	45	58
Maximum	87	93
Median	64,60	78,25
N	36	38

Table 5 shows that the mean(average score) of students' critical thinking ability in experimental class is higher than control class. The average score of control class is 64,92 and the average score of experimental class is 76,84. The larger deviation standard means the more heterogeneous data. Consequently, the smaller deviation standard means the more homogeneous data. The deviation standard of control class is 12,13 and the standard deviation of experimental class is 8,87. The variance of control class is 147,164 and the variance of experimental class is 78,731. Those conditions are in line with Budiyono (2017) who explains that the diversity level of control group is higher when the variance value of control class and its standard deviation are stated to

be higher than the experimental class. The maximum and minimum scores in experimental class are higher than control class. The median of experimental class is also higher than control class. Based on these results, it can be said descriptively that the critical thinking test in experimental class is better than control class.

Based on table 5, it can be concluded that the students' average value of critical thinking ability in experimental class which implements *wayang beber* as character-based learning media is higher than those in control class which implements varied picture media. The comparison of average score in each aspect of critical thinking ability in both classes can be viewed in table 6.

Table 6
The comparison of average scores in students' critical thinking ability

Class	Interpretation	Analysis	Evaluation	Inference	Explanation	Self-regulation
Experimental	83,026	83,026	77,368	75,789	83,158	58,947
Control	91,250	49,444	68,889	63,333	61,667	54,444

It can be viewed in table 6 that the experimental class is better than control class in five aspects including analysis, inference, evaluation, explanation, and self-regulation. The control class is better than experimental class in one aspect only. It is interpretation aspect.

The critical thinking ability of control class in interpretation aspect is 91,250; it is higher than experimental class which is only 83,026. Analysis aspect of control class is 49,444; it is much lower than the experimental class which is 83,026. The evaluation aspect of control class is 68,889; it is lower than experimental class which is 77,36. The inference aspect of control group is 63,333; it is lower than the experimental class which is 75,789. The explanation aspect of control class is 61,667; it is lower than experimental class which is 83,158. The self-regulation aspect of experimental class is 58,947; it is higher than control class which is only 54,444. The highest aspect of critical thinking ability in the experimental class is the explanation aspect, while in the control class is the interpretation aspect. The lowest aspect of critical thinking ability in the experimental class is the self-regulation aspect, while in the control class is the analysis aspect. Furthermore, it calculates the average different in critical thinking ability between both classes for each aspect. The order from largest to smallest difference is analysis aspect (33,582), explanation aspect (21,491), inference aspect (12,456), evaluation aspect (8,480)*,* interpretation (8,224), and self-regulation aspect (4,503). The data in table 6 shows that the implementation of *wayang beber* the legend of *wasisjoyokusumo* as a character-based learning media can improve the students' critical thinking ability.

Normality Test

Testing assumption as a prerequisite for difference analysis between two treatments uses t-test. It needs to carried out prerequisite test statistically. The t-test analysis requires prerequisite tests, namely normality test and homogeneity test. The data has to be normally distributed. Normality test aims to investigate whether both classes come from the population which is normally distributed or not. H_0 is defined that samples is

normally distributed. H_1 is defined that samples is not normally distributed. The normality test in both classes uses the Kolmogorov-Smirnov test with α = 0,050 using SPSS program version 16. The value of *Sig* is more than significance value (*Sig.* > 0,050), it means that H_0 is accepted. In other words, the data is distributed normally. Moreover, table 7 describes the normality test results of students' critical thinking ability.

Table 7
Normality test results of students' critical thinking ability

Class	Kolmogorov-Smirnov	KS$_{Table}$	N	Sig	Result explanation	Decision
Control	0,107	0,227	36	0,809	Sig > 0,05	Normal
Experimental	0,077	0,221	38	0,455	Sig > 0,05	Normal

It can be viewed in table 7 that the value of *sig.* > 0,05, so the test decision of H_0 is accepted. It can be concluded that the data in both classes are normally distributed.

Homogeneity Test

The second requirement before conducting t-test is the data has to be homogeneously distributed. The homogeneity test aims to examine whether the variance between both classes is homogeneous or heterogeneous. When the data between both classes has the same variance, it can be concluded that the data is homogeneous. This test is carried out in SPSS program version 16 using the Levene's test in which the value of α = 0,05. The variance between both classes is stated to be homogeneous when the significance value is more than 0,05 (*sig*>0,05). In other words, when the significance value is less than 0,05 (*sig*<0,05), it is heterogeneous. H_0 is defined that each class has homogeneous variance. H_1 is defined that each class has different variance (heterogeneous). Table 8 describes the results of homogeneity test.

Table 8
Homogeneity test results of critical thinking ability

Homogeneity Test	N	df1	df2	F$_{count}$	F$_{table}$	Sig	Test Decision of H_o
Critical Thinking Ability	74	1	72	3,883	3,974	0,053	Accepted

It can be viewed that the value of F$_{count}$ is 3,883 while the value of F$_{table(0,05)(1)(72)}$ is 3,974. The calculation indicates that F$_{count}$ < F$_{table(0,05)(1)(72)}$ and the significance value of homogeneity test is more than 0,05. It indicates that H_0 is accepted, so the value of critical thinking skill in both classes is homogeneous. The requirement of hypothesis testing is fulfilled because the data comes from the population which is normally distributed and has homogeneous variance. So the hypothesis testing through t-test can be carried out.

Hypothesis Testing

The hypothesis testing in this study uses t-test with the SPSS program version 16. The aim of the two-sample t-test is to compare whether both variables are the same or different (Sugiono, 2011). The outcomes of prerequisite test show that the critical

thinking test is normal and homogeneous. The criteria used in taking the hypothesis decision is the significance level (α) = 0,05. H_0 is stated to be rejected when *sig*. < α (0,05). It means that H_0 is accepted when the significance probability (*sig*) > 0,05. H_0 in this study states that there is no difference between the implementation of *wayang beber* as character-based learning media and varied picture media on the students' critical thinking ability. H_1 states that there is a difference between the implementation of *wayang beber* as character-based learning media and varied picture media on the students' critical thinking ability. The analysis result using t-test about the implementation of *wayang beber* (the legend of *wasisjoyokusumo*) as a character-based learning media on the students' critical thinking ability can be viewed in table 9.

Table 9
T-test result about the influence of *wayang beber* media on students' critical thinking ability

Variable	N	df	t_{count}	t_{table}	Sig	Explanation	Test Decision of H_0
Critical thinking ability	74	72	4,485	1,993	0,00	Sig > 0,01	Rejected

It is described in table 9 that the significance value is less than 0,05 (0,00< 0,05). Based on the result, it is decided that H_0 which states that there is no significant difference between the implementation of *wayang beber* as character-based learning media and varied picture media on the students' critical thinking ability is rejected. H_1 which states that there is significant difference between the implementation of *wayang beber* as character-based learning media and varied picture media on the students' critical thinking ability. The significance value is less than 0,01 (0,00<0,01). It can be concluded that the implementation of *wayang beber* influences the students' critical thinking ability.

DISCUSSION

The use of *wayang beber* (the legend of *wasis joyokusumo*) as a character-based learning media contains subject matter that has applicative values of character education and moral values for students. *Wayang beber* is used because for children telling story is everything. They will obtain useful inner experiences. In addition, the children's imagination will be more developed through stories. Puppets as a character-based learning media will invite students to interact through delivered stories.

Wayang beber (the legend of *wasis joyokusumo*) as a character-based learning media can create more effective and efficient learning because the educational elements such as students, educators, educational interaction, educational goals, subject matter, learning tools/media, learning method, and educational environment arefulfilled (Sutirna & Samsudin, A., 2015:28-32). Students are able to develop their interest, talent, and potential and able to assess their own abilities and others.

The educators can deliver different knowledge to students by providing learning material which contains moral values. Educational interactions are created when the puppets' stories are prepared and delivered by students. In this case, the goal of changing one's behavior becomes a major concern. On the other hand, the varied picture

media used in the control class do not change students' behavior and their critical thinking ability is still low. It can be interpreted as an effort to convey democratic moral values, mutual finding, students' activity, exemplary, life in, and clarify values (Hayati, A. A., 2015:132).

The purpose of education for the millennial generation will be easily achieved. Tools and methods such as *wayang beber* the legend of *wasisjoyokusumo* (character-based learning media) facilitate students' understanding, so it is more meaningful for them. They will understand moral values such as critical thinking ability and they are able to implement it in various educational environments, for instance family, community, and school environments.

The use of *wayang beber* the legend of *wasis joyokusumo* as a character-based learning media is very important. Learning media is one of components that makes learning alive and meaningful. Learning media means something that delivers learning messages from the sender to the recipient of it (Anitah, 2019). Learning media is a set of tools used by educators to communicate with students (Danim, 2019). Puppets as traditional learning media has been developed widely in the society. The use of *wayang beber* the legend of *wasis joyokusumo* as a character-based learning media in the teaching and learning process can generate new desires and interest, improve students' motivation, and stimulate learning activities for critical thinking ability; it can also bring psychological effects on students because their development consists of various dimension such as physical factors, intellectual factors including the development of cognitive, language, emotional, social, and moral (Desmita, 2017).

In line with Anitah (2019:35) who explains that the function of learning media is to increase the effectiveness and efficiency of learning implementation, to create effective communication process in learning, to improve learning quality. In accordance with this statement, the implementation of *wayang beber* the legend of *wasisjoyokusumo* as a character-based learning media can teacher easier to instil the character values in students. Mulyono (2018) states that puppet is a masterpiece that has a high value for human civilization. It is closely related to values which are reflected in the characters, stories, and various supporting elements. All values reflected in its characters can be a reference for developing national character and improving critical thinking ability.

The use of *wayang beber* the legend of *wasis joyokusumo* as a character-based learning media psychologically affects the students' critical thinking skill. The use of this learning media is carried out through storytelling activities. Teacher can tell the legend of *wasis joyokusumo* (character-based media) that contains goodness value. Teacher asks students to imitate the puppets' characters and use it as a source of motivation. Motivation is a condition that can lead to certain behavior and provide direction and resilience to these behavior (Darmuki et.al., 2017; Darmuki et.al., 2018). The advantage of puppets as learning media is acceptable; it is part of national culture so it can be accepted by teacher and students. It is a way to preserve the Indonesian culture.

The legend of *wasis joyokusumo* is a story from past time which is never changed. It makes puppets can be used as learning media from generation to generation. Puppet

does not spend a lot of money like another media. It is practical and efficient. It only requires teacher's ability to express the story in good sentences, so it is easily understood by students. Moreover, it stimulates students' critical thinking ability. The use of *wasis joyokusumo* as a learning material can instill characters interestingly. It preserve the local wisdom of Pati regency. This description can be interpreted as an effort to convey democratic moral values, mutual finding, students' activity, exemplary, life in, and clarify values (Hidayati et.al., 2020; Affandi et.al., 2022).

Instilling character values in the learning process at primary school is thematically integrated. Therefore, it is not only one teacher's responsibility, but it also the responsibility of all teachers in that schools. It is in line with a finding that character education based on local wisdom has to be integrated with all learning subjects for better results (Parwati et.al., 2018). The instilling moral values and character based on local wisdom culture is considered to be good and consistent in improving students' learning outcomes, their critical thinking ability, and better attitude. Bart et.al. (2018) states that character education based on local wisdom can improve students' learning outcomes and drive their attitude to be better. Based on the observation results of character education using the media of *Wayang Beber* (the legend of *wasisjoyokusumo*), the four characters of students which include responsibility, cooperation, respect to other's opinion, and honesty are in the category of starting to develop. It means that these characters have been to be developed in students' life. While the characters of careful and curiosity are starting to appear. It means that both of them have not been developed. A study by Pratiwi (2018) reveals that puppets can be utilized as a moral educational media based on local values. Meanwhile, in the context about the influence of learning media on critical thinking skill, Wulandari (2015) argues that there is an influence of puppets media on the students' critical thinking ability, so their learning outcomes improve. It is emphasized by Salamah (2017) who states that the use of puppet as learning media can increase students' learning outcomes.

In the implementation of *wayang beber* as character-based learning media, the students are required to be able to formulate problems and hypothesis, test tentative answers through group discussion and experiments. The students' critical thinking on the materials is caused by inquiry process. In line with Kaddoura (2011) who argues that there is a difference in critical thinking skill in the aspects of analysis, evaluation, conclusion, deduction, and induction between the class that is taught using case-based learning and the class that is taught using traditional learning. In this case, there is effective interaction that occurs between students and teacher. This condition drives the learning process runs very well and the objectives of learning are obtained. This study implements the aspects of critical thinking ability that refer to the opinion of Facione (2013) which consist of six aspects, namely interpretation, analysis, inference, evaluation, explanation, and self-regulation.

Wayang beber the legend of *wasis joyokusumo* as character-based learning media is a media that complements each other. This media requires students to think critically, while the legend of *wasis joyokusumo* emphasizes on the social practices and character values. Kleinig (2018) explains that in the learning process, students have to be active in

building the concepts of critical thinking and slove the learning problems. The different academic capabilities among the student causes some of them are active and the others are passive in the learning process. It is supported by Supena et.al (2021) who state that the ability of every child is different academically, so it has to be highlighted.

The learning process in the experimental class which implement *wayang beber* the legend of *wasis joyokusumo* runs effectively. It can be viewed from the students' enthusiasm during the learning activities. It is shown when the teacher carries out learning steps that encourage them to build their own knowledge in an interactive situation on the materials about the use of deductive and inductive thinking. This learning has been carried out very well.

The implementation of *Wayang beber* (the legend of *wasis joyokusumo*) as a character-based learning media on experimental class begins with organizing learning. Students are divided into groups of 5 persons with heterogeneous academic abilities. It is carried out to facilitate the scaffolding process through peer tutorials. This scaffolding process is carried out to make students who have high academic achievement can help the students whith medium and low academic achievements. It can minimize the gap in students' thinking ability. The following stage is the exploration of students' initial conceptions through the presentation of *wayang beber* media based on the phenomenon of using deductive and inductive thinking. Teacher helps students to explore their initial concepts by asking questions about the phenomenon. Based on the observations, students are more interested in recognizing and clarifying their own understanding and ideas. To encourage students' conceptual changes which are in line with their ideas become the aim of investigating their initial concepts. It drives them to be able to create new concepts which are more scientific. It is created in the assimilation and accommodation process. The assimilation process is an individual process in adapting himself to the new knowledge, while accomodation is an individual process in changing his initial knowledge to respond to new situation so that a cognitive balance occurs (Carbogim, et.al., 2019).

This stage aims to direct students to pour all initial concepts or ideas about the learning material, so at this stage they are able to develop critical thinking ability in the interpretation aspect. This aspect is the student's ability in classifying problems or phenomena that are received so it has clear meaning. In line with Carbogim (2019) who states that an active process in learning drives students to build a meaning and understanding system of facts through their experiences and interactions both with the sources and their partners in studying. The interpretation aspect has a difference of 8,224 between the control and experimental classes. The average score of control class is 91,250. It is higher than the average score of experimental class which is 83,026. It is higher than the average score of experimental class which is 83,026. It is because the control class is begun by presenting learning materials before doing the practice, it makes students to be easily guided. While the students in the experimental class start their learning using inquiry process.

The next stage is to build cognitive conflicts with the aim of creating it in the students' mind, so the cognitive imbalance arises. In this stage, the students present slides in form

of activity pictures about the use of deductive and inductive thinking through video presentation to solve problems. Teacher's role is to help students describe their ideas by asking questions that allow them to refute other's ideas. Cognitive conflict will make students are challenged to learn. The cognitive imbalance makes them feel dissatisfied with the phenomena that they face until they manage to find the right answer to balance it. At this stage, they are able to develop critical thinking ability in analysis and explanation aspects. The analysis aspect can be viewed when the students test ideas and analyse the causes of problems. This aspect in both classes has an average difference of 33,582. The average value of this aspect in the experimental class is 83,026. It is higher than control class which is 49,444. It is because the students' constructivist process goes well in the experimental class. While the control class obtains the materials from the teacher. The explanation aspect can be viewed when the students express and explain their opinions to find right answer related to the phenomena they face. The difference of explanation aspect between both classes is 21,491. The average score of experimental class is 83,158. It is higher than control class which is 61,667. It is because the opportunity and time given to express students' opinions in the experimental class are much more than in the control class.

The next stage is called the collaborative-concept formulation. It is carried out in a constructivist manner through assimilation and accomodation processes. This stage requires students to conduct inquiry activities by designing, conducting, and discussing experiments through collaborative group work. These activities require students to be able to formulate problems and hypothesis, and test the tentative answers. Isnawati et.al. (2020) explains that in collaborative group, students obtain the basic of critical thinking freely while expressing their opinions during discussion, making decision, and solving problems. The critical thinking ability depends on one's understanding, one' belief in his ability, level of maturity, and one's experience.

The use of critical thinking ability drives students to be more focused on the process of learning than the actual situation. It assists them to build and apply new knowledge in their real life. Absolutely, it makes them to be more creative in the learning process. When they think critically, they become actively responsible for their education and are more wise and creative. The students are trained to classify the existing data. It is done in order to formulate the problems. It also trains the aspect of interpretation because of their ability to think critically. In formulating hypothesis, students are trained in testing the data and formulating logical relationships. Moreover, it also trains the aspect of analysis in critical thinking ability. In testing tentative answers, they are focused to merge events, organize data, examine data, and make conclusion. The activities of combining event and compiling data are able to develop critical thinking skill in the aspects of explanation and evaluation. The students are required to be able to explain and assess information by providing great reasons. The aspect of evaluation in control class and experimental class has an average difference of 8,48. The average score of experimental class is 77,789. It is higher than control class which is only 68,889. It happens because *wayang beber* (the legend of *wasis joyokusumo*) as a character-based media encourages students to assess a reliable statement from an experimental report. Students can also assess opinions inductively or deductively after conducting

experiments designed independently (Facione, 2013) so, ideally the *wayang beber* (the legend of *wasis joyokusumo*) as a character-based media can affect students' ability to evaluate problem solutions.

After obtaining the experimental data, the inference is made. The difference value of inference aspect is 12,456. The average score of experimental class is 75,789 . It is higher than control class which is 63,333. It can be said that the average score of control class is lower than experimental class. The students of experimental class construct problems, present hypothesis, create experiment to reveal evidences, prove hypothesis, and make conclusion. It is supported by Beyer (1995) and Bers (2005) who explain that the aspects of students' critical thinking can be improved by recognizing and obtaining elements needed to draw reasonable conclusions, solve hypotheses, consider relevant informations, and reduce the consequences that come from data, statements, principles, evidences, assessments, beliefs, opinions, concepts, descriptions, or another representative forms.

The class presentation is carried out to convey the results of collaborative group discussion. It makes teacher to be able to observe students in acquiring, improving, and strengthening knowledge when they have discussion in group. Therefore, constructivist knowledge is obtained by the students. They will understand which materials that have been understood. In these activities, the self-regulation aspect can be trained and the teacher acts as a facilitator. The self-regulation aspect of both classes has a difference of 4,503. The average score of control class is 54,444. It is lower than experimental class which is 58,947.

Based on the result, it is decided that H_0 which states that there is no significant difference between the implementation of *wayang beber* as character-based learning media and varied picture media on the students' critical thinking ability is rejected. H_1 which states that there is significant difference between the implementation of *wayang beber* as character-based learning media and varied picture media on the students' critical thinking ability. It shows that the implementation of *wayang beber* influences the students' critical thinking ability because the significance value is less than 0,01 (0,00<0,01).

The implementation of *wayang beber* (the legend of *wasis joyokusumo*) as a character-based media can train the components of students' thinking ability especially their critical thinking ability. Guo (2016) states that *wayang beber* (the legend of *Wasis joyokusumo*) as a character-based media has initial conceptions, absorption, adjustment, cognitive decline, and staging which requires the students to construct concepts or knowledge by discussing or working together in collaborative groups, so it is able to train students' critical thinking ability.

The results of this study indicate that the implementation of *wayang beber* (the legend of *Wasisjoyokusumo*) as a character-based media can improve students' critical thinking ability. This study is in line with the researchs conducted by Wulandari et.al (2015) and Pratiwi (2018) which reveal that there is an influence of *wayang beber* (the legend of *Wasis joyokusumo*) as a character-based media on students' critical thinking ability.

Besides, this media can instil character to students through its characters and stories. Another research that supports this study is conducted by Salamah (2017) who states that puppets learning media can improve the students' learning outcomes including the critical thinking ability.

CONCLUSION

Based on the results of test decision, the significance value is less than 0,05 (0,00 < 0,05). It can be concluded that H_0; which states that there is no significance difference between the implementation of *wayang beber* (the legend of *Wasis joyokusumo*) as a character-based learning media and varied picture learning media on students' critical thinking ability; is rejected. And H_1; which states that there is significance difference between the implementation of *wayang beber* (the legend of *Wasis joyokusumo*) as a character-based learning media and varied picture learning media on students' critical thinking ability; is accepted. The conclusion of study is that the implementation of *wayang beber* as a character-based learning media influences the students' critical thinking ability because the significance value is less than 0,01, i.e. 0,00 < 0,01. The focus of further reserach is needed to investigate the practicality and effectiveness of *wayang beber* (the legend of *Wasis joyokusumo*) as a character-based learning media on the students' critical thinking ability and other aspects such as creativity.

REFERENCES

Affandy H., N. S. Aminah & A. Supriyanto. (2019). The correlation of character education with critical thinking skills as an important attribute to success in the 21st century. *IOP Conf. Series: Journal of Physics: Conf*. Series 1153.

Affandi, Y., Darmuki, A., & Hariyadi, A. (2022). The evaluation of JIDI (Jigsaw discovery) learning model in the course of Qur'an tafsir. *International Journal of Instruction*, 15(1), 799-820. https://doi.org/10.29333/iji.2022.15146a

Ahmadi, F. (2017). *Guru SD Era Digital*. Semarang: CV Pilar Nusantara.

Andriany, L. (2019). Internalization of Indonesian Language as a Critical Thinking Development Effort in Character Formation. *International Journal for Educational and Vocational Studies*, 1(7),787-790.

Anitah, S. (2019). *Media Pembelajaran*. Surakarta: UNS Press.

Badan Penelitian dan Pengembangan Pusat Kurikulum dan Perbukuan KEMDIKNAS, *Pedoman Pelaksanaan Pendidikan Karakter*, (Jakarta: Puskurbuk, 2011)

Bart Engelen, Alan Thomas, Alfred Archer & Niels van der Ven. (2018). Exemplars and nudges: Combining two strategies for moral education. *Journal of Moral Education*, 47(3), 346-365.

Bialik, M. & Fadel, C. (2015). *Skills for the 21st Century: What Should Students Learn?* Center for Curriculum Redesign: Boston, Massachusetts.

Budiyono. (2004). *Statistika Dasar untuk Penelitian.* Surakarta: FKIP UNS Press.

Carbogim, F. D. C., Oliveira, L. B. D., Toledo, M. M., Diaz, F. B. B. D. S., Bittencourt, G. K. G. D., & Püschel, V. A. D. A. (2019). Active teaching model to promote critical thinking. *Revista brasileira de enfermagem*, 72(1), 293-298.

Chalkiadaki, A. (2018). A Systematic Literature Review of 21st Century Skills and Competencies in Primary Education. *International Journal of Instruction*, 11(3), 1-16.

Darmuki, A., Andayani, Nurkamto, J., & Saddhono, K. (2018). The Development and Evaluation of Speaking Learning Model by Cooperative Approach. *International Journal of Instruction*, 11(2), 115-128. https://doi.org/10.12973/iji.2018.1129a

Darmuki, A., Andayani, Joko Nurkamto, Kundharu Saddhono. (2017). Cooperative, Synectics, and CTL Learning Models Toward Speaking Ability Viewd from Students Motivation. *Proceeding International Conference on Intellectuals'Global Responsibility (ASSEHR)*, 125, 75-79.

Desmita. (2017). *Psikologi Perkembangan Peserta Didik*. Bandung: PT Remaja Rosdakarya.

Danim, S. (2019). *Media Komunikasi Pendidikan*. Jakarta: PT Bumi Angkasa.

Facione, P. A. (2011). *Think critically*. Englewood Cliffs, NJ: Pearson.

Fisher, A. (2019), *Critical Thinking*, editor Gugi Sahara, Jakarta: Erlangga.

Hariyadi, dkk. (2018). Perkembangan Pertunjukan Wayang Beber Kontemporer di Era Modernisasi. *Jurnal Bahasa Rupa*, 1(2), 101-104.

Hendi, H. P. (2019). Perancangan Interactive Motion Graphic Tentang Wayang Beber Sebagai Sarana Pengenalan Budaya. Mavis, 1(1), 29-41.

Hidayati, N. A., Waluyo, H. J., Winarni, R., & Suyitno. (2020). Exploring the Implementation of Local Wisdom-Based Character Education among Indonesian Higher Education Students. *International Journal of Instruction*, 13(2), 179-198.

Heryandi, Y. (2018). Problem Based Learning dengan Strategi Konflik Kognitif Meningkatkan Kemampuan Berpikir Kritis Matematis. *EduMa: Mathematics Education Learning an Teaching*, 7(1), 93- 107.

Hunaidah, H., Susantini, E., Wasis, W., Prahani, B. K., & Mahdiannur, M. A. (2018). Improving collaborative critical thinking skills of physics education students through implementation of CinQASE learning model. *Journal of Physics: Conference Series*, 1–7.

Isnawati, Ibrahim, M., Tjandrakirana, Suyidno, Rusmansyah, & Kusuma, A. E. (2020). The effect of collaborative based science learning model on enhancing students' critical thinking skills and responsibility. *Journal of Physics: Conference Series*, 1422(1).

Jeynes, W. H. (2019). A meta-analysis on the relationship between character education and student achievement and behavioral outcomes. *Education and Urban Society*, 51(1), 33–71.

Kaddoura, M. A. (2011). Critical Thinking Skills of Nursing Students in Lecture-Based Teaching and Case-Based Learning. *International Journal for the Scholarship of Teaching and Learning*, 5(2), 1-18.

Kahlke, R., & Eva, K. (2018). Constructing critical thinking in health professional education. *Perspectives on Medical Education*, 7(3), 156–165.

Kim, S., Raza, M., Seidman, E. (2019). Improving 21st-Century Teaching Skills: The Key to Effective 21stcentury Learners. *Journal Sagepub (online)*, 1-19.

Kleinig, J. (2018). Trust and critical thinking. *Educational Philosophy and Theory*, 50(2), 133-143.

Liu, O. L., Shaw, A., Gu, L., Li, G., Hu, S., Yu, N., Ma, L., Xu, C., Guo, F., Su, Q., Kardanovaj, E., Chirikov, I., Shi, J., Shi, Z., Wang, H., & Loyalka, P. (2018). Assessing college critical thinking: preliminary results from the Chinese HEIghten® Critical Thinking assessment. *Higher Education Research & Development*, 37(5), 999-1014.

Ling, M. K. D. & Loh, S. C. (2020). Relationship of Creativity and Critical Thinking to Pattern Recognition Among Singapore Private School Students. *The Journal of Educational Research (online)*, Vol. 113(1). 59-76.

Mislia, M. A. & Darman, M. D. (2016). The implementation of character education through scout activities. *International Education Studies*, 9(6), 130-138.

Mungmachon, M. R. (2012). Knowledge and local wisdom: Community treasure. *International Journal of Humanities and Social Science*, 2(13), 174-181.

Mulyasa E.. (2014). *Manajemen Pendidikan Karakter*. Jakarta: Bumi Aksara.

Muskita, M., Subali, B., & Djukri. (2020). Effects of Worksheets Base the Levels of Inquiry in Improving Critical and Creative Thinking. *International Journal of Instruction*, 13(2), 519-532.

Palinussa, Anderson L. (2013). Students' Critical Mathematical Thinking Skills and Character: Experiments for Junior High School Students through Realistic Mathematics Education Culture Based. *IndoMS. J.M.E*, 4 (1), 75-94.

Persky, A. M., Medina, M. S., & Castleberry, A. N. (2019). Developing Critical Thinking Skills in Pharmacy Students. *American Journal of Pharmaceutical Education*, 83(2), 7033.

Rochmad, A. Agoestanto & M. Kharis. (2018). Characteristic of Critical and Creative Thinking of Students of Mathematics Education Study Program. *IOP Conf. Series: Journal of Physics: Conf*. Series 983.

Rahardjanto, A., Husamah, & Fauzi, A. (2019). Hybrid-PjBL: Learning outcomes, creative thinking skills, and learning motivation of preservice teacher. *International Journal of Instruction*, 12(2), 179–192.

Sadiman, A. S. dkk. (2007). *Media Pendidikan*. Jakarta: Rajawali Press.

Sahoo, S., & Mohammed, C. A. (2018). Fostering critical thinking and collaborative learning skills among medical students through a research protocol writing activity in the curriculum. *Korean Journal of Medical Education*, 30(2), 109–118.

Saputri, A. C., Sajidan, Rinanto, Y., & Prasetyanti, N. M. (2019). Improving Students' Critical Thinking Skills in Cell-Metabolism Learning Using Stimulating Higher Order Thinking Skills Model, *International Journal of Instruction*, 12(1): 327-342.

Sugiyono. (2011). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Bandung: Alfabeta.

Supena, I., Darmuki, A., & Hariyadi A. (2021). The Influence of 4C (Constructive, Critical, Creativity, Collaborative) Learning Model on Students' Learning Outcomes. *International Journal of Instruction*, 14(4), 1-21.

Sulisworo, D., & Syarif, F. (2018). The Utilization of Open Educational Resources in the Collaborative Learning Environment to Enhance the Critical Thinking Skill. *International Journal of Learning and Development*, 8(1), 73.

Syawaludin, A., Gunarhadi, & Rintayati, P. (2019). Development of Augmented Reality-Based Interactive Multimedia to Improve Critical Thinking Skills in Science Learning, *International Journal of Instruction*, 12(4), 331-344.

Styers, M. L., Van Zandt, P. A., & Hayden, K. L. (2018). Active learning in flipped life science courses promotes development of critical thinking skills. *CBE—Life Sciences Education*, 17(3), ar39.

Mulyono, S. (2018). Wayang Asal-usul, FIlsafat dan Masa Depannya. Jakarta: PT Gunung Agung.

Salamah, E. R. (2017). *Penggunaan Media Wayang Pada Pembelajaran IPS Materi Tokoh Tokoh Kemerdekaan Indonesia Untuk Meningkatkan Hasil Belajar Siswa Kelas V Sekolah Dasar.*

Suharyono, B. (2018). *Wayang Beber Wonosari*. Wonogiri: Bina Citra ustaka.

Sukmadinata, NS. (2007). *Metode Penelitian dan Pendidikan*. Bandung: PT. Remaja Rosdakarya.

Sukiman. (2018). *Pengembangan Media Pembelajaran*. Yogyakarta: Pedagogia.

Tim Pendidikan Karakter Ditjen Dikti. (2011). Naskah Akademik Pendidikan Karakter di Perguruan Tinggi. Tim Kemenristekdikti

Wulandari, Ratna. (2015). *Pengaruh Penggunaan Media Wayang Terhadap Keterampilan Menyimak Cerita Siswa Kelas II B SD Negeri Kasongan Bantul Yogyakarta (Skripsi)*. Yogyakarta: Universitas Negeri Yogyakarta.

Lickona, T. (2014). *Pendidikan Karakter Panduan Lengkap Mendidik Siswa Menjadi Pintar dan Baik*. Bandung: Penerbit Nusa Media.

Lickona, T. (2018). *Character Matter*. New York: Touchstone Rockefeller Center.

Lickona, T. (2017). *Educating for character*. New York: Bantam Books.

Parwati N. N., Tegeh I. M., & Mariawan I. M. (2018). Integrating the values of local wisdom into the learning model: building positive student character. *Educational Communications and Technology: Issues and Innovations. Springer, Cham*, 23, 297-307.

Pratiwi, Sarah. (2018). *Pagelaran wayang profesi sebagai media pendidikan nilai moral berbasis kearifan lokal bagi siswa SD.* Naskah Lomba Esssay Nasional (LEN) PGSD UNY Wates.

Warsah, I., Morganna, R., Uyun, M., Hamengkubuwono., & Afandi, M. (2021). The Impact of Collaborative Learning on Learners' Critical Thinking Skills. *International Journal of Instruction*, 14(2), 443-460.

Vela, J. C., Sparrow, G. S., Whittenberg, J. F., & Rodriguez, B. (2018). The role of character strengths and importance of family on Mexican American college students'career decision self-efficacy. *Journal of Employment Counseling*, 55, 16-26.