The Need for Astha Brata Digital Book to Improve Student's Leadership

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Abstract. This study aims to obtain information on the need for Astha Brata digital book to improve the leadership attitudes of students at SMAN 1 Prambon. This study used a qualitative approach with a case study design. The research procedure includes data collection, data processing, and conclusion drawing. The data collection methods include observation, interview, questionnaire, and documentation. The data were validated using source and method triangulation. The results showed that Astha Brata digital is needed to improve the leadership attitude of students at SMAN 1 Prambon. The digital book has the following characteristics: producing hybrid applications, using AngularJS, requiring the PhoneGap tool, and using web technologies.

Keywords: Need for digital book, astha brata, leadership attitude.

1   Introduction

Science and technology have changed over time in many ways, often with a significant impact on other areas of life. One of the effects of this development is that educators from all levels of the Ministry of Education, Culture, Research, and Technology (Kemendikbud) are starting to come up with suggestions and infrastructure to make learning more varied.

SMAN 1 Prambon is a school in the eastern part of the Nganjuk Regency, and according to the Nganjuk District Education Office Branch, the school still has minimal development of teaching materials and media. One way to improve teaching and learning is to develop digital materials, such as e-books. This involves developing facilities and infrastructure, such as digital books. Digital books are hypermedia documents that contain text and multimedia elements. They can be customized to meet the needs of individual readers. Digital books are a great innovation for reading because they're small and easy to carry, and you don't need a lot of space to store them on your computer, tablet, or smartphone.

History is an important subject at the high school level, and it can be a great way to connect with others and learn about the past. History is based on understanding how

power and exclusion play a role in the world, and on learning from the past in order to better understand the present and future. This study presents Asta Brata's teaching materials on Javanese leadership. These materials provide an overview of the key concepts and principles that are essential for successful leadership in Indonesia. Given that current government officials in Nganjuk Regency cannot be relied upon as good examples for future leaders, it is important to develop materials for the SMAN 1 Prambon program in order to provide guidance for future leaders. With this research, we hope that students will be able to learn about Asta Brata's leadership style.

2   Research Method

Qualitative approach with case study   design is one type of descriptive   approach. This research was carried   out intensively, in detail, and in-depth on an individual,   institution, or narrow subject (Arikunto, 2002)[1]. The data analysis in qualitative research consists of several stages. The first is data analysis during field studies. In qualitative research, data analysis is carried out from data collection until the research was completed (Nasution, 1988)[2]. At this stage, the researcher examined and focused on the problem of the need for teaching materials at SMAN 1 Prambon. The second is the field data analysis carried out by observation, interviews, personal documents, etc. After that, the data reduced are validated with data triangulation. The last analysis is data analysis after taking the data.

The population is a generalization area consisting of objects/subjects that have certain qualities and characteristics that are applied by researchers to study and draw conclusions (Sugiyono, 2013:80)[3]. In this study, the population selected was eight grade students of SMAN 1 Prambon consisting of two majors in science and social studies, while for the sample or representative of the population studied (Arikunto, 2008)[4] two classes were taken with a total of 72 students.

Research instruments are tools used to obtain data to solve research problems and achieve research objectives. The instrument used in this research is student questionnaire. There are four instruments used in the study, namely (1) direct observation or reviewing the selected school, (2) interviews with history teachers, and (3) questionnaires or questionnaires to be filled out by respondents, namely students, and (4) documentation. The data were collected using questionnaire. Questionnaire is a data collection technique where the researcher provides some statements that require short answers from the respondents (Sugiyono, 2010)[5]. There are several data collection techniques   used in this study, the first is observation   and interview techniques, namely seeing and recording directly the symptoms that occur in the object of research (Sugiyono, 2013:145)[3] and questionnaire data collection techniques, namely giving questions or statements that must be answered. by respondents (Samsu, 2017:145)[6]. Likert scale data analysis using the following formula:

Skor	Informations
80% - 100%	Strongly agree
60% - 79,99%	Agree
40% - 59,99%	Neutral
20% - 39,99%	Disagree
0% - 19,99%	Very strongly disagree

3   Result and Discussion

The research was conducted at the SMAN 1 Prambon Nganjuk school on the teachers. The results of interviews with teachers as informants   will be presented with the following results:

3.1   History Learning at School

The The history learning that has taken place so far in schools has been summarized in the guidelines for the results of interviews and observations at SMAN 1 Prambon conducted by researchers to the history teacher Mrs. Dra. Sukma Tridjajanti, M.Pd   on September 23, 2021 with the following results:

Table 1. Interview data

Questions	Answers
1. How has history learning been applied in schools, especially in the last two years?	The learning that has been applied during the last two years uses the distance learning method, this learning was chosen because at the time of the research the students and teachers conducted online learning
2. How are the teaching materials and media used to support learning?	Due to the COVID-19 pandemic, learning was less effective, and many students were not active in learning, so they only got an assignment and submitted it. During online learning, both teachers and students used digital applications such as Learning Management Systems (LMS) and E-Learning. They also used social media such as WhatsApp and Telegram to communicate. The only media used were PowerPoint and YouTube. One of the limitations of teachers in developing learning digital books and teaching materials is an administrative problem. Therefore, teaching materials in the form of digital books have not been developed by history teachers.

Questions	Answers
3. Has the leadership attitude been applied to students, how to apply the leadership attitude?	In essence, all teachers have applied leadership attitudes both at school and in the classroom. For example, choosing the student council president and class leader as a form of leader who is an example for other students.

Meanwhile, the results of the observations revealed that the existing facilities and infrastructure at SMAN 1 Prambon during the pandemic were teachers developing learning management systems (LMS) to support learning, as follows:
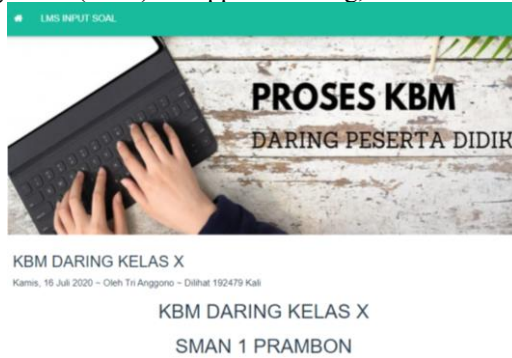
Fig. 1. learning management systems (LMS)

Source: https://sman1prambon.sch.id

3.2 Need for History Digital Book

History teaching materials need to be developed in the 21st century to support online and offline learning at SMAN 1 Prambon. There are three kinds of teaching materials. The first is teaching material based on its form, namely (a) printed material, teaching material prepared on paper to convey information in the form of photos, pictures, wallpapers, and mockups; (b) audio material, teaching material in the form of sound output using a radio signal system directly like cassettes, radios, and LPs; (c) audiovisual material, a combination of sound and moving images like VCD and films; (d) interactive material, a combination of two or more media (audio, graphics, pictures, and videos). (Kemp and Dayton, 1985)[7]. Based on the field observations, SMAN 1 Prambon requires interactive teaching materials. The second material is teaching material based on how it works, which is divided into three: (a) unprojected material that does not require tools to display like photos, models, and maps; (b) projected teaching material that requires supporting tools like slides, filmstrips, oversparencies, and computer projections; (c) audio material in the form of recorded audio signals like CD players, VCD players, and multimedia players; (d) video teaching material that requires a video tape player, VCD player, etc.; (e) media or computer, various non-printed teaching materials

that require a computer to display anything for learning purposes like computer-mediated instruction and hypermedia (Prastowo, 2015:40-42)[8]. Based on field observations at SMAN 1 Prambon, non-printed teaching materials are needed to provide online and offline learning.

The third is teaching material by nature divided into four, namely (a) printed material like books, photos, maps, etc.;(b) technology-based material like radio broadcasts, films, and videos; (c) practical material like observation sheets, science kits, and interview sheets; (d) human interaction material, especially for distance learning. like smartphones, Wi-Fi, etc. (Rowntree, 1992)[9]. The teaching material that integrates distance learning and direct learning was chosen.

In choosing teaching materials, the following principles must be considered; they are (1) relevance (selection of teaching materials related to competency standards and basic competencies) like competency suitability with learning objectives to be achieved; (2) consistency, for example, of four basic competencies, four types must be taught; (3) adequacy (the material taught must be sufficient or adequate in helping students achieve learning objectives (Aunurahman, 2009)[10]. Based on field observations, the results of the researcher's analysis show that the principle taken in choosing teaching materials is adequacy. The stages in choosing teaching materials must pay attention to two aspects, the behavioral aspect (cognitive, psychomotor, and affective assessments) and the assessment aspect (adapted to core competencies and basic competencies to be achieved) (Reigeluth, 1987)[11]. From this description, the researchers chose to develop a digital book to provide solutions to distance learning and direct learning.

Digital books are one of the teaching materials. Digital is a system that changes technology from analog (manual) to digital, meaning that the system is run by a computer such as graphics, Microsoft Word, and PowerPoint (Permana, 2017:20)[12]. Digital developments have made it possible to create "paperless" or "virtual" books that are easy to carry, store, and read when needed. The text that is the essence of the book can be stored in digital form. Digital books can convert text file formats into digital books and even add video and sound. Digital technology allows storing, carrying, and reading books only with small equipment such as feature phones, smartphones, and tablets. Digital   books or electronic books (e-books) are digital forms of printed books. Printed books generally   consist of a stack of bound paper containing picture text, so e-books contain digital information such as text, images, audio, and video, which   can be read on a computer,   laptop, tablet,   or smartphone.

3.3   Need Analysis of Digital Books to Improve Student Leadership

This third point is an explanation of the results of the questionnaire distributed to 72 students. The results of the pie chart are as follows.

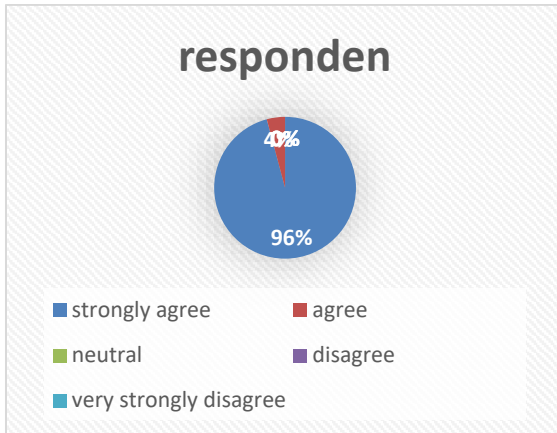a. History learning will be interesting when using teaching materials or digital books

Fig. 2. Response to Teaching Material Needs

A total of 96% answered "strongly agree" that teaching materials or digital books are used to support learning. The digital book developed is based on Ionic. Ionic is an HTML 5 mobile framework to speed up hardware that does not require any additional tools like JS Library. Ionic can also be interpreted as a framework for creating mobile applications with HTML 5 and Angular-based web programming languages. Another definition of Ionic is a set of tools supported by the Corcova framework that helps users develop HTML, CSS3, and JavaScript. The Ionic framework provides the user interface controls for mobile applications. There are several tools and software used in Ionic to test the Windows platform using the command line interface, one of which is NodeJS Version 4.4.0 to write TypeScript, CSS Script, Visual Studio Code text editor, web browser for deployment, and Google Chrome version 49.0.2623.87   for debugging. The following is how to install Ionic.

1) Install Node JS
2) Install NPM and Ionic Cordova
3) Double check the installed Ionic for use in the saved terminal settings

4) The result of the command produces the application display in the default browser on the computer.

5) To display the results of the application, Ionic servS-cls. The display is divided into three versions, namely Android, Windows, and iOS.

6) To display the application on the emulator/phone, a platform should be added to the application project by positioning the Ionic platform (Android/iOS) on the terminal. When running the application on the emulator, the user can use the command ionic (run/emulate) (Android/iOS) (Permana, and Dewanti, 2017)[12].

The benefits of using Ionic are (1) it can be used to develop mobile operating systems such as Android, iOS, and Windows Phone, (2) it can be used to develop code such as Typescript, HTML, and CSS to produce cross-platform hybrids that are fully functional for users such as creating effective technologies, and (3) it is the right application in the smoothness and speed of completing various tasks, both in small and large quantities. The advantages of the Ionic framework are (1) Ionic is a fast framework, (2) it can be built using a web platform, (3) it can be used with modern CSS features such as animation, and (4) the addition of a command line tool can speed up application development via a browser (Aditya and Ilhami, 2015)[13]. Ionic provides a variety of tools and services that help developers. It has updated tools to generate right-sized icons for each platform. To serve applications in web browsers, the following tools are included in Ionic.

1) Ionic playground is a tool used to learn Ionic without having to install it on a computer.

2) Ionic view is an app where you can distribute apps to testers and clients for feedback.

3) The documentation on Ionic serves to detail the framework, install, get started, test, and search for topics.

4) Ionic is supported by AngularJS and the JS community to support Ionic developers (Justin & Juce, 2017:1-2)[14].

b. The use of astha brata teachings to improve leadership attitudes is needed by students.

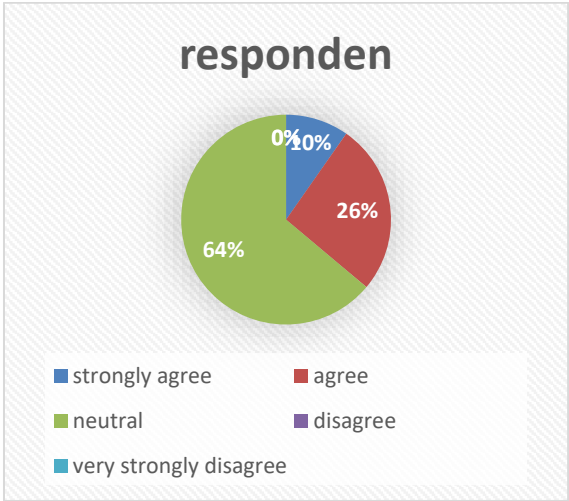**Fig. 3.** Response to Leadership Attitude Chart 3: Sun Attitude or Self-Confidence

A total of 64% of students strongly agree that students need digital books to improve leadership attitudes. The attitude of leadership is the activity of influencing people to achieve common goals (George, 1984)[15]. Meanwhile, the teaching of astha brata is an ancient Indian Sanskrit text and was rewritten in the Kakawin Ramayana around 856 AD and composed in Serat Rama by Yasadipura I in the 19th century. It is a literary work of past cultures from Kakawin Ramayana to the standard of puppetry and carangan plays (Clank, 2008: 152)[16].

Eight attitudes of leadership values that are likened to natural objects are (1) surya or sun (a leader whose existence is needed by many people), (2) bawana or earth (a leader should protect his subordinates), (3) candra or the moon (a leader has good qualities), (4) kartika or star (a leader has a vision and mission), (5) tirta or water (a leader always has an adaptable nature), (6) maruta or wind (a leader is gentle), (7) dahana or fire (hot and able to burn, meaning that a leader must be able to give a positive spirit), and (8) samodra or ocean (a leader who has broad insight) (Sunarni, 2015)[17]. These eight indicators have been included in the questionnaire which was responded to by 72 students with the following results:

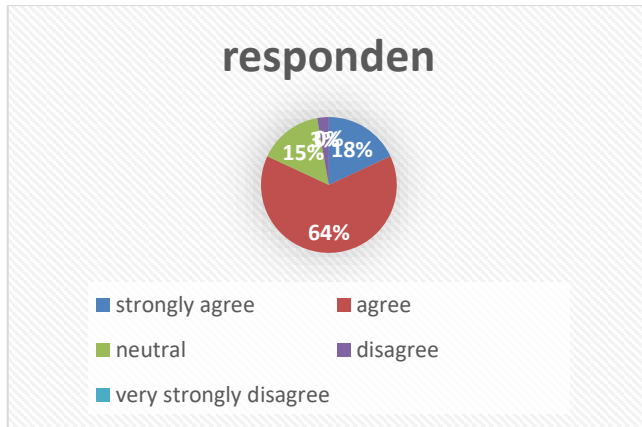### 3.4   I can be trusted to manage the class (surya or sun attitude)

Fig. 4. Sun Attitude or Self-Confidence

The chart shows that 64% of the students agree if they are trusted to manage the class, and there is no answer to strongly agree, meaning that students are not confident if they are appointed as the class captain.

3.5   If I become the captain, I will defend my friends in various ways (earth nature or nurturing)
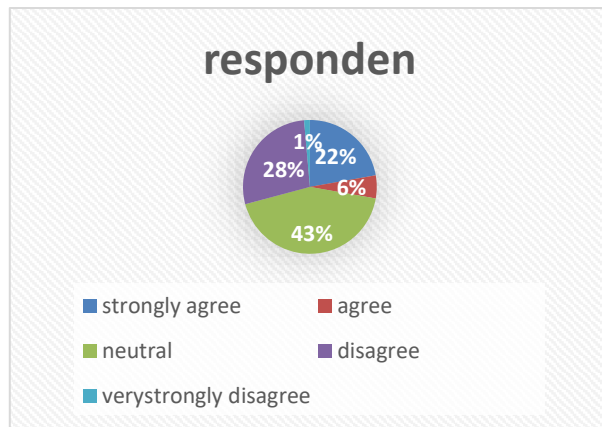

Fig. 5. Earth Attitude or Nurturing

The statement above is negative. the chart demonstrates that 43% of the students strongly disagree and 28% disagree, meaning that students already understand what it means to protect friends.

3.6 If I become the class captain, I will direct my friends or members towards a good goal (candra or moon attitude).
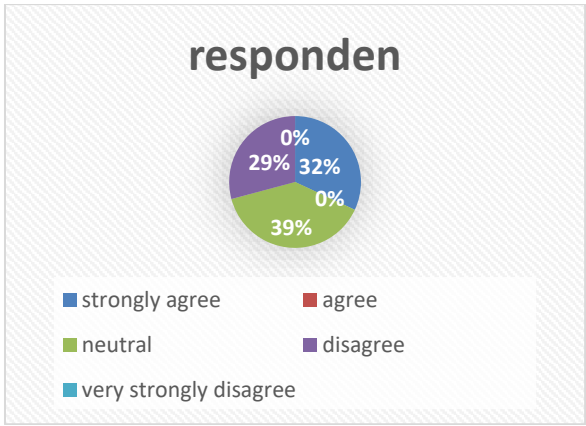
Fig. 6. Candra or Moon Attitude

This positive statement resulted in 39% of students answering neutral and 32% of students answering strongly agree. This proves that they have not shown the attitude of directing their friends to a good goal.

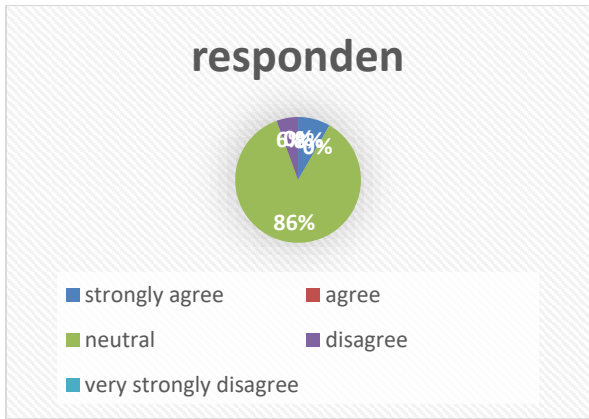### 3.7 If I am the class captain, I must have a clear vision and mission (kartika or star attitude)

Fig. 7. Kartika Attitude or Visionary

The statement is positive. A total of 86% of students answered neutral and 8% answered strongly disagree. This shows that students do not have a vision and mission when appointed as the class captain.

3.8   I am a student who is open and able to accept new cultures (tirta or water attitude)
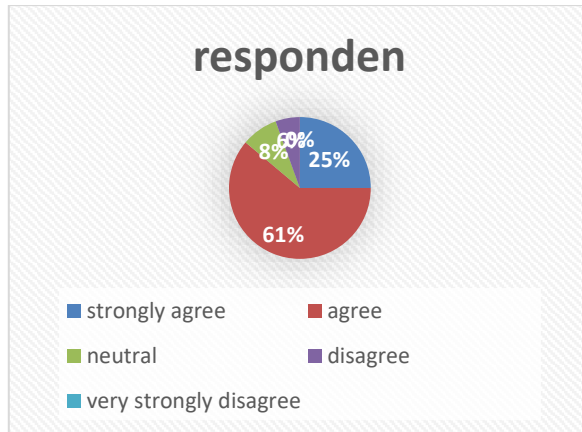
Fig. 8. Water Attitude or Adaptability

The statement above is positive with the results of 61% of students agreeing and 25% strongly agreeing. This shows that students are easy to adapt to new environments.

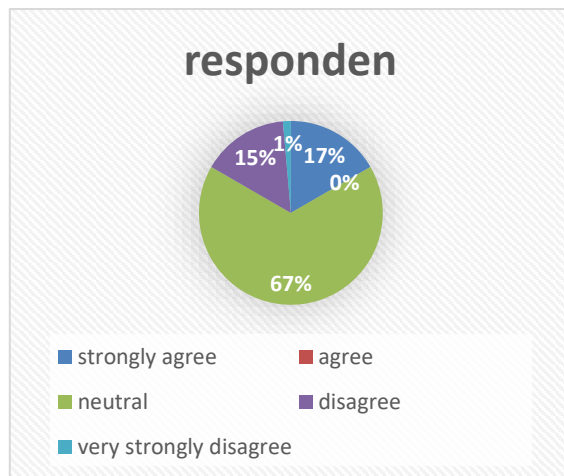### 3.9   I am a humanist person (maruta or wind attitude)

Fig. 9. Wind or Humanist Attitude

The statement above is a positive statement with the result that 67% of students answered neutral and 17% answered agree. It can be concluded that students cannot be categorized as humanists.

3.10   If I am the class captain, I will be excited to lead my members in a better direction (dahana or fire attitude)
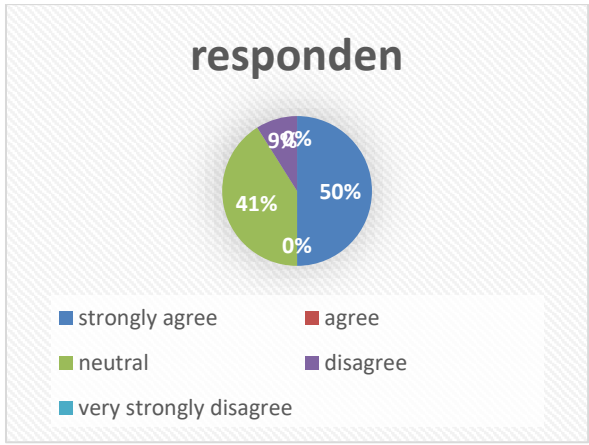

Fig. 10. Fire or Spirit

The statement above is positive with the results that 50% of students answered strongly agree and 41% neutral. It means that students have the passion to lead their members in a better direction.

4   Conclusion

Digital books are needed at SMAN 1 Prambon to improve students' leadership attitudes. Based on the results of the   questionnaire,   the students do not know nor understand the importance of leadership attitudes. Therefore, to provide a solution to this problem, history lesson was held with astha brata teaching material containing leadership values that can be applied to students to provide innovation in learning. The Ionic-based digital book was developed to support student learning.

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