THE EFFECT OF APPLICATION TOWARDS CADETS' ENGLISH ABILITY: A GREEN PLANET SUISTAINABILITY
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ABSTRACT

There are many things should be prepared for the Human Resource (HR), to guarantee the promise future and career. The 5.0 era hopes that technology and human are going to live harmoniously in order to improve the quality of human life on an ongoing basis and facilitate the human interest. Meanwhile, in 4.0 era, the social ecosystem accesses a database in cyberspace from the internet and searches, retrieves and analyzes information or data. The society 5.0 is very dependent on cyberspace (visual room) and physical space. In this era, the English ability is very important to achieve. Moreover, there should be any efforts to improve it. The purpose of this study is to describe the efforts of maritime educational institutions in facing the 5.0 era using applications affecting the cadet's competence of English at PIP Semarang. This type of research is quantitative method with 'one group pre-test post-test pre-experimental (non-design)'. To complete the data, it could be done by using observation, documentation and library research. Meanwhile the analysis of research data used validity and reliability. The results of the study showed that an application has affected to improve the cadet' English ability. The conclusion is the application is one of the efforts of maritime education to face 5.0 era in education technology as consequently green planet sustainability.

Keywords: Human Resource, Application, Cadet, English, Ability

1. Introduction

The 5.0 era hopes that technology and human are going to live harmoniously in order to improve the quality of human life on an ongoing basis and facilitate the human interest. Meanwhile, in 4.0 era, the social ecosystem accesses a database in cyberspace from the internet and searches, retrieves and analyzes information or data. The society 5.0 is very dependent on cyberspace (visual room) and physical space. Overcoming the inequality that occurs requires learning efforts using Smart Education in accordance with the industrial era 4.0, and society 5.0 which is assisted by applications. This will reduce the usage of consuming woods, paper, and stay on green planet sustainability.

The quality of Human Resources (HR) is always sought to improve by the community and the government. Quality improvement is pursued through education. A new pattern of vocational education launched by the Directorate General of Vocational Education that prioritizes character education and the practice of Pancasila, by strengthening technology as a tool of equality. Government policies must be conducive to mobilizing the private sector to increase investment in the education sector. Innovation drives all government activities oriented towards job creation, prioritizing new and innovative vocational education and training approaches, by cutting out all obstructive regulations that mean having breakthroughs and increased investment. Freedom to learn (Merdeka Belajar) to build 21st century skills that should be possessed, such as: creative and innovative, collaborative and communicative, critical thinking and skilled in solving problems, becoming a global citizen, having technological literacy, and being a learner throughout life.

In today's era of society 5.0, product development, Smart education is a popular term to describe education used as part of a management strategy. Smart education includes Classroom, School Management, Communication, Learning Materials, Evaluation, and Cost. Modern Educational Medium includes Projectors,

Tablets/laptops, Learning Management Systems (LMS), and E books. Educational technology as a tool to deliver education based on Technology Based Learning (TBL) consisting of Audio Information Technology and Video Information technology, and Technology Based Web Learning (TBWL) namely Data Information Technology.

PIP Semarang has goals contained in the vision and mission. The vision of PIP Semarang is: "To become a Professional, Independent, and Globally Minded Commercial Shipping University", while the mission of PIP Semarang is: 1) to provide education and training services of national and international standards to obtain excellent, professional, ethical shipping resources, 2) develop mastery of applied science and technology in the field of shipping through research and community service, 3) implement transparent and accountable and independent sustainability governance by increasing the ability of all organizational resources continuously, and 4) collaborate with stakeholders, the business world, the industrial world and alumni in order to realize a sustainable performance network.

Based on the mission mentioned above, PIP Semarang graduates are required to be ready to use. PIP Semarang cadet in carrying out the Internship are required to master competencies. Competence is the ability and characteristics possessed by a person in the form of a set of knowledge, skills, and behaviors that must be lived and mastered to carry out their professional duties (PIP Education Regulations). During the implementation of English (known as Maritime English (ME) of language learning is seen as part of efforts to form a professional attitude. This attitude will affect the language competence to communicate which makes the work demands of the maritime industry.

The score of Maritime English learning is a benchmark for cadet' competence abilities. The following is data on the average score of Maritime English for PIP Semarang cadets of the Nautical Study Program, Engineering, and Management of Sea Transportation and Port in the 2019/2020 semester. Using this range of scale, the score will be:

Tabel 1. Interpretation of Score

Range of scale	Score in Alphabet	Score in Numeric	Meaning
91 – 100	A	4	Very Good
81 – 90	A-	3,6	Good
71 – 80	B+	3,2	Fair
61 – 70	B	2,8	Poor
51 – 60	B-	2,4	Very Poor

The acqition of ME scores in PIP Semarang cadet for the odd and Even semester of the 2019/2020 school year is presented in Table 2 as follows:

Table 2. Score of English Practice for Odd Semester Cadets of PIP Semarang 2019/2020 Academic Year

Semester	Deck	Engine	Port	Average	Meaning
I	76,44	71,80	77,47	76,955	Fair
III	73,07	75,90	78,10	73,07	Fair
VII	69,49	-	72,11	70,8	Fair
VIII	-	80,24	-	80,24	Fair
Total Rata-Rata	73	80,24	74,79	75,26625	Fair

Source: PIP Semarang Academic Report, 2020

Table 3. Score of English Practice for Even Semester Cadets of PIP Semarang 2019/2020 Academic Year

Semester	Deck	Engine	Port	Average	Meaning
II	75,87	75,54	73,22	74,87	Fair
IV	73,07	74,72	77,02	74,93	Fair
VII	76,95	-	-	76,95	Fair
VIII	-	74,33	77,45	75,89	Fair
Total Rata-Rata	75,29	74,86	75,12	75,66	Fair

Source: PIP Semarang Academic Report, 2020

Thus, it can be concluded that there are many cadets who need to improve their abilities. The category "fair" is needed to be upgrade into higher score.

The results of research that highlight the problem of the development of knowledge and technology in the field of learning are the use of digital learning media can increase student motivation, increase learning independence and competence of cadets in certain subjects, eliminate space and time limitations, clarify information, reduce costs that are not small, and the findings are not all schools have adequate facilities and infrastructure to support learning using digital learning media. (Permansyah, Waningsih), The research is in line with this research, namely using digital media, carried out offline, with the aim of mastering certain competencies. An application is made in which there are several programs, namely e-books, e-guidance, e-videos in which there is material that is needed by cadet for practical English learning purposes. The difference with this study is that the subjects are cadets who have specific goals in order to have sufficient competence, get the desired place of practice and understand the challenges that will be faced later by using Maritime English. In principle, these two studies are the same, namely learning to use digital media to improve English competence.

2. Research Method

The research used quantitative method with 'one group pretest posttest pre-experimental (non-design)'. According to Sugiyono (2011:73), it can be explained that the design is pre-experiments. It is called pre experiments because this design is not yet a real design. There are still external variables that also affect the formation of the dependent variable. The experimental results, which are the dependent variable, are not solely affected by the independent variable. This is because there is no control variable and the sample is not chosen randomly. The one group pretest-posttest design, there is a pretest before being given treatment, the results of the treatment can be known more accurately, because it can compare with the situation before being treated. The form of the design chart is as follows:

Effect of treatment: O1 – O2.

This design has several drawbacks, because it will produce several comparison measures. These weaknesses are caused, among others, by historical factors (does not produce differences in O1 and O2), maturation (research subjects may experience fatigue, boredom, or hunger and are sometimes reluctant to answer if judged not to be in accordance with the prevailing values), and the making of research instruments.

The population of the research was 96 cadets of sixth semester cadet who was joining Shipboard program. The total number of respondents were 50. The sample of the research were taken by clustering sampling. Clustering sampling means choosing an intact group of population member as samples of research with similar characteristic (Gay, 2009). The researchers randomly choose the group of population.

Try out of the instrument is applied the sample of the study the validity and reliability of the instrument should be tested. The try out was given to respondent out of the subject of the research. The try out result used to test the validity and reliability of the instrument. It was Internship English test, in the form of a link of google form that consists of 36 questions in multiple choice, inside 12 videos in 12 topics of internship that can be found in the application. The validity used Pearson formula.

$$r_{XY} = \frac{n \sum XY - (\sum X)(\sum Y)}{\sqrt{[n \sum X^2 - (\sum X)^2][n \sum Y^2 - (\sum Y)^2]}}$$

The results of the study showed that an application has been created to increase capabilities of cadet' English ability. If r count > 0,6 is valid.

As for the reliability according to Heaton the formula is

$$r_{11} = \frac{(k)(s^2 - \sum pq)}{K - 1 \; s^2}$$

r_{11} = instrument reliability
p = the proportion of the subject who answer correctly
q = the proportion of the subject who answer incorrectly
s = the standard deviation

The test is said to be reliable if it is consistent to the measurement. This formula will be applied in order to discover the interval reliability of each test. A standardized test must have a reliability measurement of at least 0,80.

Descriptive analyzed data of mean scores of pre-tests and post-test were calculated by using the formula as follows:

$$M = \frac{\sum X}{N}$$

Where:
M   = the mean score of the students' achievement
        in speaking
Σ x = the sum of all scores
N   = the number of subjects

The mean score would show the improvement made by the students. Finally, the resulted data descriptively analyzed through the following formula:

$$Percentage = \frac{The\ sum\ of\ the\ chosen\ an\ item}{The\ sum\ of\ the\ chosen\ all\ items} \times 100\%$$

3. The Result and Discussion

The instrument to test the English ability can be found in the Internship application named Bedjan V.1 application.
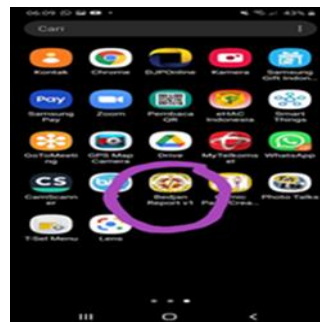
3.1. The Bedjan V.1 Application.

Bedjan V.1 application was created in accordance with the intentions of English capability of PIP Semarang. It can be downloaded both in mobile phone or laptop. The name Bedjan is actually remain the phenomenal of campus training, one of the inspiring trainers of PIP Semarang called Pak Bedjan.

Results and discussion must be presented in the same section, clearly and briefly. The main discussion section contains the benefits of research results, not the results section of the test. Results and discussion sections can be written in the same section to avoid extensive citations. Tables or graphs should present different results. The results of data analysis must be reliable in answering research problems. Discussion references cannot extend references in the introduction. Comparison of the findings of previous studies should be included.

3.2 The Treatment

Figure 2. The application downloaded on mobile phone

Inside the application is made as English learning materials during Internship with the topics: Senior Speech, Preparation for carrying out Internships (On Board Training and Internship), Tips and Interviews needed before and during the internship. This application is used as a means of training for the development of English language skills in making English language reports. Users of this application are Shipboard training ready cadet in semester III, IV, V, VI of the Deck, Engine, and Port and Shipping Study Program.
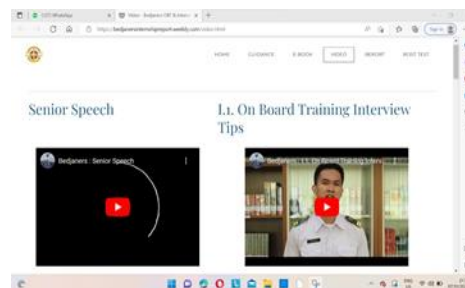
Figure 3. The materials on the applications

All the materials and tests in application are paperless, can be opened easily at anywhere and anytime, leading to green planet sustainability.

Table 4. The material contained on the Website, that can be studied is as follows

Material	Learning Stages	Topic	Study Program	Duration
1		Senior Speech	N,E,P	4.30
2		On Board Training Interview	N,E	4'21
3	Preparation of OBT and Internship	Internship Interview	P	2.59
4		On Board Training Interview Tips	N,E	4'35
5		Internship Interview Tips	P	4.40

6		Tips Sign On	N,E	4.22
7		Preparation of Internship Tips	P	2.30"
8		Description of my assignment and responsibilities of my Internship's company, also the important aspects of the work of significant knowledge, skills, or personal development.	N	2.04
9	Video	Description of my problems or challenges and how to handicap	N	4.48
10		Description of my assignment and responsibilities of my Internship's company, also the important aspects of the work of significant knowledge, skills, or personal development.	E	3.05
11	Reporting	Description my problems or challenges and how to handicap in the last one month.	E	2.17
12	Video Samples	Description of my assignment and responsibilities of my Internship's company, also the important aspects of the work of significant knowledge, skills, or personal development.	P	3'32

Note:
1 : can be learnt by all study programs; Deck (N), Engine (E), and Port and Shipping Department (P).
2,4,6,8 : can be learnt by Deck.
10,11 : can be learnt by Engine
3,5,7,12 : can learnt by for Port and Shipping.

Each study program is required to study all material, but for making reporting is only according to each study program

3.3. The Test
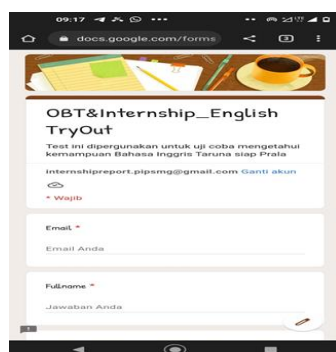The instrument is tried out before being used.

Figure 1. Try out Test using Goggle Form

The English Try out Test consists of 36 questions in multiple choice contain 12 video materials. Each video material contains 3 questions. There are 36 questions. But there are 4 invalid questions. So, r-count is more than r-table for df= N-2 or 36-4=32 which is 0,839. The result shows that the 32 items are valid. Meanwhile from the reliability test, it got Cronbach alpha 0,920 which shows that the Cronbach alpha is bigger than 0,80. The result shows that the test item is reliable. It tried out before in different group of 30 cadets using Google Form. It has 36 questions, then based on the tryout, 32 questions used in the Pre and Post Test.

Before giving test, the cadets do the Pre-test. There is no announcement of the test given to the cadet before the test is held. It conducted on February 2021. The treatments are found in the video of the application. It has e-book, e-guidance, and videos were learned by cadet for about a month. The post test is conducted at the end of the time of experience. To find out the affect, the study used a simple statistical calculating, getting result post-test minus pre-test.

Figure 2. Pre-Test

Figure 3. Post Test

Both Pre-test and Post-test are using google form inside videos and the questions from each topic of internship. Pre-test delivered to 50 cadets from 54 batch students who are doing their Shipboard training. It held on the first week of February, and the Post-Test delivered on the last of February. The test aimed to know the students' English ability. The specific achievements expected in the learning contained on this website are to increasing the student knowledge about the basic concepts of preparation for implementing "Shipboard Training/Internship" with fun, easy and communicative learning media, to increase the student knowledge about reporting in the implementation of effective Shipboard Training, and to improving the English ability in reporting. Learning Materials are conversational materials used for activities related to the implementation of Shipboard Training). The pre-test for students was conducted before they got the treatment using the

application while the post test was after the treatment using the application. The mean of the Pre-test of 50 cadets score is 68,975, and its Post-Test is 87,75.

3.6 Discussion

Table 5. Pre-test and Post-test of 50 Cadets

		Pre-test	Post-test	Difference
		(A)	(B)	B-A
	Mean	68,975	87,75	18,775

From table shown above we know that mean score from sample of 50 cadets are increasing 18,77. It means it means that there is improvement in English ability. It has 27 % from mean score of pre-test 68,975 to mean score of Post-test 87.75.

English acquisition is proved to be crucial in academic development. From the result it is found that there is improvement in English ability. There are two types of skills: productive and receptive. In both skills, both the use of mobile and desk application is proved can improve the skills.

First, from productive skills in the term for speaking and writing where students actually have to produce language themselves. Implementing mobile apps   can help students enhancing their speaking skills. As said by Ataeifar et al. (2019), that students' speaking skills improved after employing Voice Thread app and Twitter in the learning process.

Another researcher, Akkara et al. (2020) Indicated that mobile apps can be employed to develop students' speaking skills. Students can utilize mobile apps to improve their writing skills. It is also discussed that the use of application can enhance their motivation. To prove it, Andujar (2016) researched to examine how utilizing Mobile Instant Messaging (MIM).

The prove also come from Alam and Mizan (2019). In their research, it is documented that MALL such as Facebook can be utilized to improve English writing skills.

In receptive skill, it is also proved that the use of mobile application can improve the listening and reading skills. The first skill discussed is listening. Alabsi (2020) documented that adding text using mobile apps to a video can improve students' listening comprehension skills. The students are motivated by using the use of mobile application.

According to Kondo et al. (2012), students using MALL in learning reading gained better scores on the Test of English for International Communication (TOEIC). Another researcher, Hazaea and Alzubi (2018) identified that MALL such as WhatsApp and Google search engine can enhance L2 learners' reading ability.

Another skill that is improved is vocabulary. Polakova and Klimova (2019) researched how utilizing a mobile application in the learning process can improve students' vocabulary skills. The participant the research were twenty second-year vocational students who learn English for three hours a week.

4. Conclusion

The conclusion is the application is affected to English ability of the cadet's English ability. It can be as one of the efforts of maritime education to face 5.0 era in education technology as consequently green planet sustainability. Here, English ability is affected by training using this application that can be found in the Internship Application. The impact of this study is application can increase english capability of the cadet, and can also be tried to other subject using application, that is paperless, green planet sustainabilityKesimpulan penelitian disajikan secara singkat, naratif, non-bullet, dan konseptual. Dampak penelitian harus disebutkan.

5. Acknowledgments

References

Akkara, S., Mallampalli, M. S., & Anumula, V. S. S. (2020). Improving second language speaking and pronunciation through smartphones. International Journal of Interactive Mobile Technologies, 14(11), 280-287. https://doi.org/10.3991/ijim.v14i11.13891

Alabsi, T. (2020). Effects of adding subtitles to video via apps on developing EFL students' listening comprehension. Theory and Practice in Language Studies, 10(10), 1191-1199. https://doi.org/10.17507/tpls.1010.02

Alam, M. Z., & Mizan, F. B. (2019). Facebook as a formal instructional environment in facilitating L2 writing: Impacts and challenges. International Journal of Language Education, 3(2), 41

Ataeifar et al. (2019). Ataeifar, F., Sadighi, F., Bagheri, M. S., & Behjat, F. (2019). Iranian female students' perceptions of the impact of mobile-assisted instruction on their english speaking skill. Cogent Education, 6(1), 1662594. https://doi.org/10.1080/2331186X.2019.1662594

Hazaea, A. N., & Alzubi, A. A. (2018). Impact of mobile assisted language learning on learner autonomy in EFL reading context. Journal of Language and Education, 4(2), 48-58. https://doi.org/10.17323/2411-7390-2018-4-2-48-58

Heaton, J. (2004). Reworking Qualitative Data. Sage Publications Ltd

Kondo, M., Ishikawa, Y., Smith, C., Sakamoto, K., Shimomura, H., & Wada, N. (2012). Mobile assisted language learning in university EFL courses in japan: Developing attitudes and skills for self-regulated learning. ReCALL (Cambridge, England), 24(2), 169-187. https://doi.org/10.1017/S0958344012000055

Peraturan Pendidikan, (2020). PIP Semarang.

Poláková, P., & Klímová, B. (2019). Mobile technology and generation Z in the english language classroom – A preliminary study. Education Sciences, 9(3), 203. https://doi.org/10.3390/educsci9030203

Saleh, Mursid. (2008). Enam Tradisi Besar Penelitian Pendidikan Bahasa. Universitas Negeri Semarang Press.

Samsudi, (2009). Desain Penelitian Pendidikan, Universitas Negeri Semarang Press.

Soegiyono, (2011). Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung: PT. Alfabeta