Preparing Vocational High School Students’ 21st Century Skills Needed through Pair Work Strategy and YouTube Channel Integration

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1. Introduction

The fourth industrial revolution is helping to transform all facets of daily life. Rapid changes in technology, industry, and society are expected in the 21st century due to increased interconnectedness and smart automation, which are conceptualized by Industry 4.0. New interactions between humans and machines, increased data volume, computational power, connectivity, the emergence of business intelligence analysis, as well as improvements in digital transfer instructions to the physical world, such as 3D printing and robotics, characterize the changes in industrial revolution 4.0 [1, 2]. Besides, the Internet of Things (IoT) and its supporting technologies serve as the backbone for cyber-physical systems (CPS) in the industrial revolution 4.0 [3–5]. IoT is a key component of Education 4.0 [6]. Indeed, humans are meant to be prepared for the digital revolution age [7].

This world transformation, where information and communication are fully utilized, has also impacted the
world of education. Digital change has a significant impact on education, and as a result, it requires extra attention and improvement of the system [8]. Education became more networked, with pupils having direct access to a range of knowledge sources. Education 4.0 aligned with the fourth Industrial Revolution becomes the trend where digitalization takes part [6, 9–11].

In the context of the Indonesian Educational System, vocational high schools must be given special consideration in the integration of education 4.0 in the country. This is due to the fact that the program itself is designed to prepare the graduates to be ready to access the labor market. According to Seameo et al. [12], technology and engineering, information and communication technology, health, arts, crafts, tourism, agro-business technology, and business and management are the key areas or fields that vocational secondary schools focus on building students’ skills in. The graduate Vocational High School students have three options after pursuing a national secondary certificate in which they can directly join the labor market by filling job vacancies available in industries related to their course of study, work independently as entrepreneurs or pursue higher education at tertiary institutions [13]. The Indonesian Ministry of Education and Culture (MOEC) made a major policy decision on the proportion of general secondary schools and vocational secondary schools, with the proportion of vocational secondary schools being greater than that of general secondary schools, based on the premise that the growing economy of Indonesia requires more middle-level workers to graduate from secondary vocational schools than from general secondary schools, with the expectation that link and match between vocational education and the world of work will be strengthened, and graduates from vocational secondary schools will be absorbed by the world of work.

The reality, however, does not match the expectations. The study from Ohara et al. [14] indicated that despite the government’s efforts and expectations to increase the share of vocational high schools, student interest in entering vocational schools is still inferior to student interest in entering general secondary school. Besides, the data analyzed by Indonesian Bureau Statistics Center indicated that the Vocational Secondary school level was the highest contributor to the unemployment rate in the consecutive years from 2016 to 2019. Moreover, Central Statistics Agency [15] also reported that among all educational levels, Vocational High Schools have the most open unemployment (8.49 percent). The quality of graduates from Vocational High School is still viewed as a long way off from what is expected [16]. Ohara et al. also suggested that graduates of vocational secondary schools must possess certain skills. In other words, students in vocational secondary schools must acquire the knowledge, skills, and attitudes necessary to address global concerns [17, 18].

Being able to communicate and collaborate is one of the skills needed to utilize to cope with the 21st century drastic transformation [17, 19–23]. As a matter of fact, the necessity of speaking English is undeniable. English still becomes at the top list of foreign languages dominating worldwide communication. Even though many websites offer content in other languages, the vast majority of Internet users choose English. Srivani et al. [6] describe that among the worldwide webs’ top ten languages, English is at the top of the list of Internet languages. Zikmundová [24] also argued that many non-English speakers use English in their daily life and on the Internet. English’s status as a universal language means that mastering the language to communicate effectively is critical for anyone living outside of nations where English is commonly spoken. It is possible to do business internationally, further one’s education, and take part in scientific research by learning English [25].

Although the 4.0 industrial era has seen an increase in the demand for English, Indonesian English language competency is still much behind what is expected. The overall proficiency of English language learners in Indonesia is categorized as low proficiency [26]. Among the 112 countries that participated in the study, Indonesia is listed at number 80. This result is worsening in 2019 when Indonesia was listed at number 60 [27]. Thus, the students’ ability to communicate in English is still out of expectation. Mahbub [28] revealed through his study that a significant percentage (93.75%) of vocational high school (VHS) students in his study expressed that there was a high number of students who stated that their English ability was at an elementary level since they struggled to communicate effectively in the language. The study from Inderawati and Petrus [29] indicated that 81.5% of the VHS students under their investigation recognized their level of English skills as beginners. Moreover, it was found that the pupils in Anhar et al. [30]’s study did not reach the English proficiency level required for students in vocational colleges. The students are unable to compete on a global scale because they lack the necessary skills. VHS in the tourism program argued that the most challenging skill they need to learn was speaking [31]. If students continue to struggle with English in the classroom, let alone in a global context, it will be difficult for them to communicate internationally [32].

With today’s technology and 21st century demands, using YouTube in collaboration with Pair Work Strategy to learn is an option that should not be disregarded. YouTube is one of the social media platforms that is getting popularity nowadays. YouTube is the most popular social networking app on Android devices, and it also has the largest average time spent by a user. According to App Annie’s findings, the average monthly time spent on YouTube’s mobile app is now nearly 24 hours [33]. According to Ceci [34] as of April 2022, Indonesia ranked as third with 139 million users watching content on YouTube. With this phenomenon, incorporating YouTube into English language instruction to develop students’ speaking skills might be beneficial. Moreover, it cannot be argued that the use of the pair work strategy, a collaborative learning approach that places students in small groups to engage in learning activities through discussion [35], in teaching English has a good influence [36–40].

In reality, during the last three years, both in and outside of Indonesia, plentiful research has been conducted on the topic of YouTube usage in English-speaking classrooms, for example [41–55].
To the best of the knowledge of the researchers, only a few numbers of studies have been conducted to give quantitative evidence on the utilization of YouTube in English Speaking Classes, more specifically for students attending Vocational High Schools in Indonesian contexts. Therefore, this present study is expected to bridge the gap by investigating the effect of the pair-work strategy and YouTube integration to promote students’ speaking performance. It is anticipated that the outcomes will contribute to the empirical data on how to enhance vocational high school students’ competitiveness in the 21st century.

2. Research Method

2.1. Participants. The methodology behind this research was classified as a quasi-experimental design with a nonequivalent pretest post-test control group design. This study included the participation of sixty-four students in the tenth grade at a Vocational High School. The students attended an Indonesian high school that was approved at the A-state level for its vocational program. Both the experimental and the control groups each had an equal number of students assigned to them.

2.2. Data Collection Procedures. Prior to the intervention, both the experimental and control groups were given the pretest. The test was in the form of a speaking performance test. Richards [56] mentioned that one type of talk was talk as a performance which is referred to as public talk, that was, talk which transmits information before an audience such as morning talks, public announcements, and speeches. The content of the test was validated by confirming the national curriculum which was implemented in the school. Try out was also conducted to make sure the time allocation for the speaking test and familiarize the scoring rubric used by the two raters. As Mackey and Gass [57] suggested that to increase confidence in scoring, it is critical not just to code the data to more than one rater wherever possible, but also to carefully choose and train the raters.

The students in the experimental group then were treated by using a YouTube channel integrated with a pair work strategy. In this study, the channel used mainly was “Speak English with Tiffany,” a channel owned by the native speaker, Tiffany. The channel is dedicated to helping non-native English speakers to have better performance in English than native speakers do. During the interventions, the students were studied in pairs. The students watched the YouTube channel, confirmed the researcher’s work in a group, then perform their speech. The study was conducted for 10 meetings in total. After the intervention, the two groups were given the post-test, 2–5 minutes speaking performance.

Five speaking components: fluency, pronunciation, vocabulary, grammar, and details, constituted the students’ overall speaking performance. Each of the components scores in the range from 1 to 5. The results of interrater reliability of the two groups show that there was a strong correlation between the scores judged by the two raters. Mackey and Gass [57] suggested calculating the interrater reliability on the data used for the research, not the data used for the training. As a matter of fact, the researchers calculated the interrater reliability of the two groups, experimental and control groups, and pretest and post-test scores judged by the two raters. Table 1 summarizes the results.

The correlation coefficient is in the range between 0.5 and 1.0, which indicated a large correlation [58]. It is possible to conclude that those raters were evaluating the identical set of data with the expectation that it would represent the same phenomenon. The findings did certainly point to a high degree of consistency among the data that was acquired.

3. Results

Before conducting a statistical analysis to see the effect of Pair Work Strategy and YouTube Channel integration on students’ Speaking performance, a prerequisite analysis, and normality test was conducted. The results of the test indicated that the data collected in this study were normally distributed since the sig value is more than 0.05. Table 2 presents the summary of the tests.

Based on the results of the normality test, it was confirmed that parametric tests would be used for the rest of the statistical analyses. The researchers next looked to see if students who had been exposed to a pair work method and YouTube channel integration had made notable gains in their speaking abilities. The students’ performance before and after being taught by the course was compared. It appears to progress in the students’ scores after being subjected to a 2-month intervention. The result indicated a statistically significant improvement in the students’ speaking performance before (Mean = 69, SD = 5.988) and after the intervention (Mean = 86.16, SD = 4.444), t(31) = 15.516, P < 0.001, (P = 0.00 < 0.05), Table 3 presents the summary of the analyses.

The magnitude of the intervention’s effect was also calculated by obtaining the eta squared. The formula is displayed in equation (1).

\[
\text{Eta squared} = \frac{t^2}{t^2 + N - 1}
\]

\[
\text{Eta squared} = \frac{15.516^2}{(15.516)^2 + 32 - 1} = 0.886.
\]

The result 0.886 > 0.14 indicated that there was a large effect size on the difference in students’ speaking performance before and after the intervention.

After confirming that there was a statistical difference in the performance before and after the intervention, the difference between the control and experimental group was examined. The independent sample t-test was conducted. The results indicated that there was a statistically significant difference P < 0.001, (P = 0.00 < 0.05) in the mean score of the speaking performance for the experimental and control groups (Table 4 displays the summary of the analyses). The eta square calculation also indicated that there was a large effect size (0.443 > 0.14) of the integration of pair work...
strategy and YouTube channel on the students’ overall speaking performance. The eta squared formula for the independent sample \( t \)-test is presented in equation (2).

\[
\text{Eta squared} = \frac{t^2}{t^2 + \left(N1 + N2 - 2\right)}.
\]

\[
\text{Eta squared} = \frac{7.031^2}{(7.031)^2 + (32 + 32 - 2)} = 0.443.
\]

4. Discussions

The purpose of the research is to investigate the potential impact of integrating YouTube channels with pair work strategies. The students’ overall speaking performance improved, according to the results of both parametric tests. When the findings from before the intervention and the outcomes after the intervention were compared, there was a considerable improvement. A substantial difference was also demonstrated by a comparison of the means of the two groups, which were the experimental group and the control group. The studies also confirmed that the effect size of the intervention is deemed to be big, which indicates that the improvement in the students’ speaking performance was significantly influenced by the implementation of the pair work method and the YouTube channel.

Students were found to be more motivated while participating in the interventions if they were watching a YouTube channel. They have a reduced sense of stress as a result of participating in educational activities that used media they are already familiar with. This is in line with what Albahlal [41] reported through his study that YouTube videos are viewed by teachers as having a proven effect on lowering students’ anxiety while increasing their speed of learning and ability to stay on task in class. YouTube has also been shown to assist students to learn in a pleasant and encouraging environment [47]. Students appeared to be more engrossed each time they were connected to YouTube. Apriani et al. [43] agreed that due to the fact that YouTube was an interactive medium that was employed in the teaching and learning process, there was an increase in both the students’ speaking achievement as well as their motivation to study. Meinawati et al. [51] describe that students are more attentive to YouTube videos because they find it more enjoyable to learn by watching. As a result, students are chuckling as they watch videos made by YouTubers, who strive to make their content as entertaining as possible. In fact, the adoption of YouTube could be an alternative way to lessen the students’ speaking issues in terms of psychological

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<th>Groups</th>
<th>Pretest</th>
<th>Post-test</th>
<th>Paired Sample ( t )-test</th>
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<tr>
<td>Mean score</td>
<td>69.41</td>
<td>86.16</td>
<td>-16.750</td>
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<td>SD</td>
<td>5.988</td>
<td>4.444</td>
<td>6.107</td>
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<td>Std error mean</td>
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<td>( t )-value</td>
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<td>1.080</td>
<td>-15.516</td>
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<td>Sig. (2-Tailed)</td>
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<th>Summary results of independent sample ( t )-test.</th>
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<td>Groups</td>
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<td>Experimental</td>
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<td>Control</td>
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<td>Independent Sample ( t )-test</td>
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<th>Table 1: Summary of interrater reliability.</th>
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<td>Experimental group</td>
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<td>Spearman’s rho</td>
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<td>Post-test experimental</td>
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<td>Post-test control</td>
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<th>Table 3: Results of Pair Sample ( t )-test in Experimental Group.</th>
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<td>Independent Sample ( t )-test</td>
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<th>Table 4: Summary results of independent sample ( t )-test.</th>
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aspects. Anxiousness is believed to be one of the students’ psychological problems that they experience [27].

Moreover, utilizing YouTube channel in English speaking class improve the students’ performance, which includes the aspects of fluency, pronunciation, vocabulary, grammar, and details. In addition, this is because the channel used during the interventions, namely “Speak English with Tiffany,” which is the primary channel, was owned by a native speaker. Riswanto et al. [59] affirm that listening to a native English speaker with a realistic accent motivates students to practice their pronunciation and expand their vocabulary, both of which help them improve their overall fluency. The students learned not only about the content of the channel, but also how the content creator employed the words and how she pronounced each word naturally through the use of the channel. When the students watched the videos on the channel, they used them as a starting point for discussion, which gave them something to talk about. This is in agreement with what Syafiq et al. [60] mentioned that students’ speaking skills increased when they used YouTube videos as English learning material, including fluency, vocabulary, pronunciation, grammar, and content. The findings of the study were also in line with the finding by [43, 48, 52, 53], in which they revealed that the whole aspects of speaking performance were increased since the use of YouTube in their learning activities.

What is most important to be pointed out in this study is that the integration of the pair work strategy in the use of YouTube channels. During the interventions, the students did not only watch the materials from YouTube but also have real-time practice with the teacher as well as their partners. This is where the procedure of the pair work strategy was implemented. The teachers provided entertaining learning materials as well as provided the students with activities in which they could practice the linguistic features they just learned interactively. As the students were allowed to use their language orally whenever possible, they can express themselves verbally [61]. According to [62] pair work strategies, students can practice language together, study a text, and research language. They can write dialogues, predict the content of reading texts or compare notes on what they have heard or seen. Indeed, when students work in pairs, they have the opportunity to work toward the same learning objective as other students [63]. Duc et al. [64] confirmed through their study that students not only had a better environment for learning and speaking as a result of their participation in pair and group work, but they also had more opportunities to practice speaking English. Thus, the procedure of pair work is a good way to improve students’ speaking skills, particularly in classes with a range of mixed abilities. The study from Jatmiko [38] indicated that when students work in pairs, they have more opportunities to interact with one another as they answer questions from the teacher and take part in additional pair work activities. This means the procedure of pair work is a good way to develop student competence in speaking skills. Besides, the pair work strategy used in the classroom could be considered as a way to promote collaborative skills as one of the needed skills in the 21st century. According to Lai [65], collaboration can be defined as the mutual participation of participants in a concerted effort to solve challenges jointly. He also stated that collaborative engagement is characterized by a shared objective, structural equality, and a high level of negotiation, interactivity, and mutuality. Interaction that results in detailed explanations will be very beneficial to students’ skills in the process of teaching and learning. Concerning helping students who are struggling academically, working together can make a big difference.

5. Conclusion

Results from this study show that students’ English-speaking skill improves with the use of a pair work technique and the incorporation of YouTube channels. This study picked a vocational high school as the focus of its research because of its importance in preparing graduates to work in industrial labor during the Industrial Revolution 4.0 to help the Indonesian economy grow. Since the implementation can promote students’ needed skills for the 21st century, notably the ability to communicate and collaborate, this study recommended educators to use pair work techniques and integration of YouTube channels.

However, the primary purpose of this research was to investigate the possible cause-and-effect relationship between three factors: students’ speaking performance, pair work approach, and YouTube channel integration. The researchers did not investigate how the students and teachers felt about the implementation of the new strategy. In addition, the researchers investigated looking at the students in the tenth grade at the VHS. It is advised that further research must be done to further investigate the performance of students in specific fields of study.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declared no conflicts of interest.

Authors’ Contributions

Riswanto Riswanto and Santiana Santiana created the concept and design, Rida Inderawati drafted the manuscript and performed the data collection, Bambang Parmadi performed data acquisition/analyses, Pebri Prandika Putra performed data interpretation, Kasmaini Kasmaini performed the critical revision of the manuscript, and Noni Purnama Sari reviewed/edited the manuscript.

References


