

### CLASSROOM ACTION RESEARCH: IMPROVING YOUNG LEARNER'S VOCABULARY USING NEARPOD

Nurhayati Balqis<sup>1</sup>, Leil Badrah Zaki<sup>2</sup>

<sup>1,2</sup>Universitas Internasional Batam

Email: [nurhayatibalqis221@gmail.com](mailto:nurhayatibalqis221@gmail.com)<sup>1</sup>, [leil@uib.ac.id](mailto:leil@uib.ac.id)<sup>2</sup>

**Abstrak:** Studi Penelitian Tindakan Kelas (PTK) ini menyelidiki efektivitas Nearpod sebagai alat digital interaktif untuk meningkatkan penguasaan kosakata pelajar muda. Penelitian ini dilakukan terhadap siswa kelas dua dan tiga di sebuah sekolah dasar swasta di Kota Batam, dengan fokus pada kemampuan mereka mempelajari dan mengingat kata-kata baru dalam bahasa Inggris. Desain pre-test dan post-test diterapkan untuk mengukur peningkatan kosakata siswa, didukung dengan wawancara siswa untuk menilai persepsi mereka terhadap kegiatan pembelajaran berbasis Nearpod. Temuan ini menunjukkan adanya peningkatan yang signifikan dalam penguasaan kosa kata siswa, dengan rata-rata nilai post-test meningkat dari kategori “Cukup” (21–60) menjadi kategori “Sangat Baik” (81–100). Siswa melaporkan keterlibatan dan motivasi yang tinggi karena fitur interaktif Nearpod, seperti kuis, permainan mencocokkan, dan alat bantu visual. Studi ini menyimpulkan bahwa Nearpod adalah platform yang efektif dan menarik untuk pengajaran kosakata, berkontribusi terhadap perkembangan bahasa pelajar muda. Hasil ini menyoroti potensi pengintegrasian alat digital gamified dalam pembelajaran bahasa awal untuk meningkatkan perolehan kosa kata dan pengalaman belajar secara keseluruhan.

**Kata Kunci:** Pembelajar Muda, Kosakata, Gamifikasi.

**Abstract:** *This Classroom Action Research (CAR) study investigates the effectiveness of Nearpod as an interactive digital tool for enhancing young learners' vocabulary acquisition. The study was conducted with second and third-grade students in a private primary school in Batam City, focusing on their ability to learn and retain new English words. A pre-test and post-test design was implemented to measure the students' vocabulary improvement, supported by student interviews to assess their perceptions of Nearpod-based learning activities. The findings indicate a significant increase in students' vocabulary mastery, with average post-test*

*scores improving from the "Fair" category (21–60) to the "Very Well" category (81–100). Students reported high engagement and motivation due to Nearpod's interactive features, such as quizzes, matching games, and visual aids. The study concludes that Nearpod is an effective and engaging platform for vocabulary instruction, contributing to young learners' language development. These results highlight the potential of integrating gamified digital tools in early language learning to enhance vocabulary acquisition and overall learning experiences.*

**Keywords:** *Young learners, Vocabulary, Gamification.*

## INTRODUCTION

Vocabulary is the cornerstone of language acquisition and an essential component of academic success (Dahlia et al., 2023). Words are a fundamental part of language because they symbolize objects, actions, and ideas that humans are otherwise unable to express (Nurlaili, 2021). From an early age, vocabulary building plays a crucial role in a child's ability to understand and use language effectively (Akbar et al., 2022). A rich vocabulary enables children to express themselves clearly, understand instructions, and learn more thoroughly. Research has shown that children with a rich vocabulary tend to perform better in reading comprehension and general literacy skills, which are fundamental to all areas of learning (Zargar et al., 2020). In language learning, vocabulary is the basis of communication (Dakhi, 2019). When teaching vocabulary, educators should carefully choose learning materials to effectively convey the meanings to students (Sonita & Raditya Priambada, 2024). Vocabulary enables learners to understand the meaning of new concepts, express ideas, and engage in meaningful conversations. In addition, vocabulary development is essential not only for academic purposes but also for lifelong learning and a successful career. In our increasingly information-rich society, the ability to communicate clearly and effectively is essential. A strong vocabulary enhances a person's ability to learn new information, adapt to new situations, and express ideas convincingly. Developing vocabulary from an early age lays the foundation for effective communication and lifelong learning (Sun & Yin, 2020).

Learning vocabulary in early childhood involves many challenges that can make it a difficult and often overwhelming task. One of the biggest challenges is that children are easily bored and need more engaging and interactive teaching methods to keep their attention (Taula'bi, 2022). Sari et al (2020) stated there are two groups of young learners; they are the younger group aged 6-8, and the older group aged 9-12. Traditional methods of learning

vocabulary, such as memorization and repetition, are often ineffective for this age group (Amir Alameen, 2024). Thus, gamification can be a useful strategy for young learners. Gamification turns mundane tasks such as learning grammar or vocabulary into fun activities by incorporating elements from video games, such as points, leaderboards, challenges, prizes, and badges (Thurairasu, 2022). This approach leverages the natural appeal of games and competitions and makes vocabulary learning a stimulating and enriching experience for students.

To determine the focus of the study in the field of the English language, the researcher conducted interviews to find out the problems encountered by students in learning the language. The results of the interviews showed that students have problems in all aspects of English. The main difficulty reported was the lack of understanding of English words. Inadequate vocabulary was a significant obstacle to improving their overall English language proficiency. In light of these findings, the present study focuses on strategies to enhance the students' vocabulary.

Several studies have investigated how online gamification can improve young learners' vocabulary. (Purnawan et al (2022) showed that Kahoot gamification significantly improved vocabulary acquisition. According to (Minalla, 2024), teaching verbs and adjectives with animated movies is quite effective. According Hassan & Hashim (2021) , Plickers have a good effect on students' motivation and perspective. (Dahlia et al (2023) demonstrated that online games with crossword puzzles and visual aids significantly increased the vocabulary of fourth-grade students. (Thilini & Ekanayake, 2024) noted positive perceptions of online games by teachers and second-grade students despite some control difficulties. In addition, (Hasan & Habibie, 2023) noted that the Wall Word medium game was effective in improving vocabulary learning in SMP Negeri 1 Paguyaman, Gorontalo, because it was engaging and effective in vocabulary learning.

Many previous studies have used various game tools such as Kahoot, crossword puzzles, word walls, videos, and songs, to improve vocabulary learning. Despite the popularity and effectiveness of these tools, researchers have been unable to find studies that specifically analyze the effect of Nearpod on vocabulary development. This study aims to fill this gap by examining how Nearpod can be used as an innovative and interactive platform to facilitate vocabulary learning for English language learners.

**RESEARCH METHOD****Research Design**

Stringer (2008) asserts that continuous assessment and review provide a way for teachers to improve their teaching methods. Similarly, (John W. Creswell & J. David Creswell, 2008) suggests that CAR helps teachers enhance their practices by actively addressing teaching challenges. Teachers creatively implement actions to tackle issues, fostering their growth and increasing student engagement through better teaching methods. Jalaludin (2021) highlights that Collaborative Action Research (CAR) is different from other educational research because it follows a structured "cycle" during the implementation process. CAR focuses on practical solutions and gradual improvements over time, rather than just relying on theories. It encourages teachers to collect and analyze data regularly, adjusting their teaching based on students' needs. Therefore, to enhance student academic performance, this research will employ Classroom Action Research (CAR) as its methodology.

**Participants**

Participants in the study are second and third-grade students from one of the private primary schools in Batam City. Researchers chose these students because they are not yet proficient in English and are at a critical stage in their language development, where they need to acquire vocabulary and establish a foundation for their English skills. Students of this age respond well to interactive and engaging learning methods, and the opportunities offered by Nearpods can greatly increase their motivation and interest in vocabulary learning.

**Instrument**

Data will be collected through a combination of students' pre-tests, post-tests, and interviews. The pre-test and post-test results will be analyzed to determine if progress has been made with the implemented strategies. David E. Gray (2004) identifies several reasons for using interviews as a data collection instrument. Interviews allow for the obtaining of highly personalized data, which is customized to the individual's experience or perspective, while also providing the opportunity to gain deeper insights into students' opinions during the strategy's implementation.

<b>Vocabulary Level Test score</b>	<b>Value</b>	<b>Criteria</b>
--	--------------	-----------------

<b>81-100</b>	<b>A</b>	<b>Very Well</b>
<b>61-80</b>	<b>B</b>	<b>Well</b>
<b>21-60</b>	<b>C</b>	<b>Fair</b>
<b>0-20</b>	<b>D</b>	<b>Poor</b>

Vocabulary scores will be rated according to the criteria in the Amatul Firdausah1, Dina Merris Maya Sari (2022) established table. In this table, test scores fall from 81 -100 into subsequent levels A (Very Well), levels B (Well), and levels C (Fair)), and 0–20 to levels D (Poor). The researchers' aim after the treatment is for the students obtain a level higher in their post-test compared to their pretest to indicate an improvement in their vocabulary after the implementation.

### **Data Collection**

To collect data for this study, the researchers developed a comprehensive data collection plan. First, the researchers will interview the students to identify gaps in their skills and develop appropriate strategies to address them. A pre-test will be administered to get the initial results, which will then be compared with the post-test results. The selected strategy will be implemented in the classroom for four sessions. At the end of the implementation period, a post-test will be administered to assess the improvement of students' skills. In addition, the researcher will interview the students to better understand their views on the teaching strategies.

### **Data Analysis**

According to Kemmis and McTaggart (1988), the process of conducting collaborative action research (CAR) consists of four main phases: planning, action, observation, and reflection. Therefore, the data analysis in this study is divided into these phases. In the planning phase, researchers observe students to identify specific knowledge gaps and determine

appropriate strategies to address these gaps. In the action phase, the researchers analyze the pre-test results to determine the initial knowledge level and implement the selected strategies. After several implementations, a post-test is administered to assess the student's progress. In the control phase, the researchers compare pre-test and post-test results to evaluate the effectiveness of the strategy. They also conduct interviews to better understand students' perceptions and reasons for the results. The interview data collected from the students was analyzed using thematic methods. This method involves identifying, analyzing, and reporting patterns (themes) in the data. During the analysis, several key themes emerged, reflecting the students' experiences and perceptions of the educational strategies being implemented.

## **RESULTS AND DISCUSSION**

### **Pre-test and Post-test of Students in Improving Young Learner's Vocabulary Using Nearpod**

In the study, participants engaged in a Nearpod activities that involved completing a task, each meeting have different theme. For example, in one of the meeting, the task focused on classroom vocabulary. They were presented with 10 number of task with a list of words including "computer," "whiteboard," "projector," "chair," "bag," "book," "desk," "clipboard," "pencil," "sharpener". Using the interactive features of Nearpod, the students matched these words to corresponding images. This engaging activity aimed to enhance their understanding and retention of common classroom items, leveraging Nearpod's interactive platform to make learning more enjoyable and effective.

The findings indicated a significant improvement in the students' vocabulary mastery, affirming the study's purpose that Nearpod can effectively enhance young learners' vocabulary. This improvement was evidenced by comparing the pre-test and post-test results. Initially, the average score in the pre-test ranged from 21-60, categorized as "Fair." This showed that the students had limited vocabulary knowledge at the start of the study, showing the need for effective intervention. After the implementation of the Nearpod activities, the post-test scores increased dramatically to an average range of 81-100, categorized as "Very Well." This substantial increase demonstrated that using Nearpod as an interactive learning tool significantly boosted the students' vocabulary skills. The engaging and interactive nature of Nearpod's activities helped maintain the students' interest and motivation, leading to better retention and understanding of new vocabulary. These results confirmed that Nearpod could

be a powerful tool for improving vocabulary acquisition among young learners.

The students went through all cycles of Classroom Action Research (CAR), which included planning, acting, observing, and reflecting, to improve their vocabulary scores from the pre-test to the post-test. Initially, they took a pre-test where their average scores ranged from 21-60, indicating a "Fair" level of vocabulary knowledge. The intervention involved engaging in Nearpod activities that focused on classroom vocabulary, where they matched words like "computer," "whiteboard," "projector," "chair," "bag," "book," "desk," "clipboard," "pencil," and "sharpener" to corresponding images and sentences. The interactive and gamified features of Nearpod kept the students motivated and engaged throughout the learning process. Observations during the activities showed that the students were actively participating and enjoying the learning experience. After implementing these activities, the students took a post-test, and their scores significantly increased to an average range of 81-100, categorized as "Very Well." The substantial improvement from the pre-test to the post-test scores demonstrated the effectiveness of the CAR cycle and Nearpod's interactive platform in enhancing young learners' vocabulary mastery.

In conclusion, the study effectively demonstrated that Nearpod significantly enhances young learners' vocabulary acquisition. The interactive Nearpod activity, which involved matching classroom-related words with images and sentences, proved to be an engaging method for vocabulary learning. The results showed a marked improvement in students' vocabulary mastery, as evidenced by the pre-test scores in the "Fair" range of 21-60 and the post-test scores increasing to the "Very Well" range of 81-100. This dramatic improvement confirms that Nearpod's interactive and engaging features effectively support vocabulary development. It shown its potential as a valuable tool in educational settings.

### **Perceptions of Students in Improving Young Learner's Vocabulary Using Nearpod**

The interviews with both the students revealed positive perceptions of using Nearpod to improve their vocabulary. During the interviews, the students were asked the following questions: 1) How did you feel when using Nearpod to learn new words? 2) What did you like the most about the Nearpod activities? 3) Did Nearpod make learning new words fun for you? How? 4) Which Nearpod game or activity helped you learn the most? Why? and 5) How do you think Nearpod helped you remember new words better? These questions aimed to gather their perceptions and experiences of using Nearpod for vocabulary learning. The interview

questions were adapted and developed based on insights from previous studies, specifically Alawadhi & Abu-Ayyash (2021) and Wulandari (2022). These studies provided a foundation for designing questions that effectively elicited students' perceptions and experiences of using Nearpod for vocabulary learning.

The students expressed enthusiasm and enjoyment when engaging with the interactive platform, which significantly contributed to their learning experience. Student A mentioned, "I felt excited because it was like playing a game," indicating that the gamified nature of Nearpod made vocabulary learning more enjoyable. The students showing specific elements of Nearpod that they found particularly engaging. The students appreciated the visual aids and quizzes integrated into the activities. Student A stated, "I liked the pictures and the quizzes, they were fun," demonstrating that the combination of visual and interactive content effectively captured their interest and attention. Furthermore, the interviews revealed that the gamification aspect of Nearpod played a crucial role in making vocabulary learning enjoyable. When asked if Nearpod made learning new words fun, student B responded, "Yes, it was fun because we got to play and learn at the same time." This response underscores the importance of incorporating fun and engaging elements into educational tools to maintain young learners' motivation and interest.

The students also identified specific Nearpod activities that significantly aided their vocabulary acquisition. For instance, student B shared, "The matching game helped me a lot because I liked finding the right pictures." This feedback suggests that activities involving visual matching and interaction were particularly effective in reinforcing new vocabulary for the students. Finally, the interviews provided insights into how Nearpod helped students retain new words. Student A reflected, "I remember the words better because of the pictures. Once I see the picture, I know what it is" This indicates that the combination of visual stimuli and active engagement through questions and quizzes enhanced the students' ability to recall and retain new vocabulary. In brief, the interview findings supported the conclusion that Nearpod was an effective tool for improving vocabulary acquisition among young learners.

### Discussion

In the study, students participated in Nearpod activities designed to improve their vocabulary related to common classroom items. They completed tasks matching words like "computer," "whiteboard," "projector," and others to images and sentences. This interactive



and engaging method aimed to enhance their understanding and retention of these words. According to previous research, technology integration in education can significantly improve learning outcomes (BAŞAR & ŞAHİN, 2022). Similarly, Nearpod's use of visual and interactive elements aligns with findings by Biletska et al., (2020) that innovative tools can enhance foreign language learning.

The results showed a substantial improvement in the students' vocabulary skills. Pre-test scores ranged from 21-60, categorized as "Fair," indicating limited initial vocabulary knowledge. After using Nearpod, the post-test scores increased to 81-100, categorized as "Very Well." This improvement demonstrated the effectiveness of Nearpod in enhancing vocabulary acquisition. The interactive nature of the platform kept students engaged, leading to better retention of new words. (Mastura et al., 2023) also found that Nearpod significantly boosted reading comprehension among L2 learners, supporting the current study's findings.

Student interviews revealed positive perceptions of Nearpod. The students felt that the activities were fun and engaging, which contributed to their learning experience. The students mentioned enjoying the visual aids and quizzes. One student said, "I liked the pictures and the quizzes, they were fun," affirming the importance of incorporating visual and interactive content in educational tools. These findings are consistent with previous studies by Fernanda Núñez-Naranjo et al., (2024), which emphasized the benefits of a technological approach in teaching language skills.

Students also noted that the gamification aspect of Nearpod made learning enjoyable. They appreciated the interactive games that helped reinforce their vocabulary. One student remarked, "The matching game helped me a lot because I liked finding the right pictures." This feedback suggests that activities involving visual matching are particularly effective for young learners. (Arnold Yesid Rojas et al (2020) discussed the role of technology in making language learning processes more engaging and effective, which aligns with the current study's findings.

Furthermore, the study found that Nearpod helped students retain new words better. Student reflected, "I remember the words better because I see them and then answer questions about them." This indicates that the combination of visual stimuli and active engagement through questions and quizzes enhances vocabulary retention. Syathroh et al (2021) also showed the potential of technology integration for improving language skills, which supports the positive outcomes observed in this study.

In conclusion, the study demonstrated that Nearpod is an effective tool for improving

young learners' vocabulary. The significant improvement in test scores and positive student feedback confirmed that the interactive and engaging features of Nearpod effectively support vocabulary development. This aligns with previous research on the benefits of using gamification tools in education, reinforcing the value of integrating innovative platforms like Nearpod in teaching practices.

## CONCLUSION

In conclusion, the researcher conducted a Classroom Action Research (CAR) to determine the effectiveness of using Nearpod in improving young learners' vocabulary. A pre-test was administered before implementing Nearpod, and a post-test was conducted after several sessions utilizing Nearpod. The average pre-test scores ranged from 21 to 60, categorizing the performance as "Fair." After the implementation of Nearpod activities, the post-test scores increased significantly, with an average range of 81 to 100, categorizing the performance as "Very Well." Additionally, interviews conducted supported these findings. Thus, it can be concluded that Nearpod is an effective tool for improving young learners' vocabulary.

## REFERENCES

- Stringer, Ernie. 2008. *Action Research in Education* (2nd Edt.) New Jersey: Pearson Education, Inc
- Jalaludin. (2021). *Penelitian Tindakan Kelas (Prinsip dan Praktik Instrumen Pengumpulan Data)*. Jambi: Pustaka Media Guru.
- Akbar, H., Gulnaz Fatima, H., & Unis, B. (2022). Evaluating the Vocabulary Building of the Students through Circle Time at ECE. In *Journal of Early Childhood Care and Education* (Vol. 6).
- Alawadhi, A., & Abu-Ayyash, E. A. S. (2021). Students' perceptions of Kahoot!: An exploratory mixed-method study in EFL undergraduate classrooms in the UAE. *Education and Information Technologies*, 26(4), 3629–3658. <https://doi.org/10.1007/s10639-020-10425-8>
- Arnold Yesid Rojas, Luis Alejandro Novoa, & Santiago Andres Sandoval. (2020). A General Review of The Role of Technology in The English Language Learning Process. *ENLETAWA Journal* , 12(2), 78–96.
- BAŞAR, T., & ŞAHİN, L. (2022). Technology integration in teaching English as a foreign

- language: A content analysis study. *Journal of Educational Technology and Online Learning*, 5(1), 204–222. <https://doi.org/10.31681/jetol.972577>
- Biletska, I. O., Paladieva, A. F., Avchinnikova, H. D., & Kazak, Y. Yu. (2020). Using Innovations in Training Foreign Language Teachers. *Universal Journal of Educational Research*, 8(11D), 30–36. <https://doi.org/10.13189/ujer.2020.082404>
- Dahlia, U., Sofyan, D., & Rahmah, M. (2023). ONLINE CROSSWORD PUZZLE ON YOUNG LEARNERS' VOCABULARY KNOWLEDGE. In *Journal of English Language Studies* (Vol. 5).
- Dakhi, S. (2019). The Principles and the Teaching of English Vocabulary: A Review Tira Nur Fitria. *Journal of English Teaching*, 5(1).
- David E. Gray. (2004). *DOING RESEARCH IN THE REAL WORLD* . Sage.
- Fernanda Núñez-Naranjo, A., Elizabeth, S., Reinoso, C., & Morales-Urrutia, E. (n.d.). *Improving English Language Skills with a technological approach in Teaching*.
- Hasan, J. R., & Habibie, A. (n.d.). *The effectiveness of using wall word media in teaching vocabulary for EFL young learners*. <http://ejournal.iaingorontalo.ac.id/index.php/JETLI>
- Hassan, F. A., & Hashim, H. (2021). The Use of an Interactive Online Tool (Plickers) in Learning Vocabulary among Young Learners in ESL Setting. *Creative Education*, 12(04), 780–796. <https://doi.org/10.4236/ce.2021.124055>
- John W. Creswell, & J. David Creswell. (2008). *Research Design Qualitative, Quantitative, and Mixed Method Approaches* (fifth). SAGE .
- Mastura, A., Dewi, S. L., Misnar, M., Zuhra, I., & Misnawati, M. (2023). Boosting the L2 Learners' Reading Comprehension Capability by Employing Nearpod Media. *IJORER : International Journal of Recent Educational Research*, 4(6), 877–888. <https://doi.org/10.46245/ijorer.v4i6.431>
- Minalla, A. A. (2024). Enhancing Young EFL Learners' Vocabulary Learning Through Contextualizing Animated Videos. *Theory and Practice in Language Studies*, 14(2), 578–586. <https://doi.org/10.17507/tpls.1402.31>
- Nurlaily. (2021). *STUDENTS' PERCEPTIONS: ENHANCING VOCABULARY MASTERY THROUGH VOCABULARY CARDS BANK PROJECT ON INSTAGRAM*. 4(5).
- Purnawan, N., Padmadewi, N. N., & Budiarta, L. (2022). The Effect of Online Gamification Quiz Application on Vocabulary Mastery for Young English Learners. *JINOTEP (Jurnal Inovasi Dan Teknologi Pembelajaran): Kajian Dan Riset Dalam Teknologi*

- Pembelajaran*, 9(1), 33–43. <https://doi.org/10.17977/um031v9i12022p033>
- Sari, D. F., Yusuf, Y. Q., Darniati, N., & Fajrina, D. (2020). Boosting young efl students' speaking through game activities. *Elementary Education Online*, 19(2), 436–444. <https://doi.org/10.17051/ilkonline.2020.689664>
- Sonita, T., & Raditya Priambada, H. (2024). *STUDENTS' PERCEPTIONS ON THE USE OF ONLINE ROLE-PLAYING GAMES TO ENHANCE THEIR VOCABULARY KNOWLEDGE*. 7(1).
- Sun, H., & Yin, B. (2020). *Vocabulary Development in Early Language Education* (pp. 1–26). [https://doi.org/10.1007/978-3-030-47073-9\\_3-1](https://doi.org/10.1007/978-3-030-47073-9_3-1)
- Syathroh, I. L., Kareviati, E., Lestari, A., Fitria, N., Siliwangi, I., & Com, I. (n.d.). *EXPLORING THE POTENTIALS OF TECHNOLOGY INTEGRATION FOR TEACHING LANGUAGE SKILLS: A LITERATURE REVIEW*. [www.discuss.cle.ust.hk](http://www.discuss.cle.ust.hk)
- Taula'bi', N. (n.d.). *Creative Teaching Strategies Implemented in Teaching English to Young Language Learner* (Vol. 2, Issue 4). <https://dmi-journals.org/deiktis/index>
- Thilini, K. K., & Ekanayake, N. (n.d.). *A Study on the Perceptions of Using Online Games to Develop Vocabulary Knowledge of Grade 10 ESL Learners*. <https://www.researchgate.net/publication/377728488>
- Thurairasu, V. (2022). Gamification-Based Learning as The Future of Language Learning: An Overview. *European Journal of Humanities and Social Sciences*, 2(6), 62–69. <https://doi.org/10.24018/ejsocial.2022.2.6.353>
- Wulandari, E. (2022). QUIZIZZ APPLICATION FOR ENGLISH ONLINE LEARNING: THE STUDENTS' PERCEPTIONS. *JURNAL PAJAR (Pendidikan Dan Pengajaran)*, 6(3), 640. <https://doi.org/10.33578/pjr.v6i3.8774>
- Zargar, E., Adams, A. M., & Connor, C. M. D. (2020). The relations between children's comprehension monitoring and their reading comprehension and vocabulary knowledge: an eye-movement study. *Reading and Writing*, 33(3), 511–545. <https://doi.org/10.1007/s11145-019-09966-3>