

IMPLEMENTATION OF A DIGITAL TECHNOLOGY-BASED RESEARCH-BASED LEARNING MODEL IN PAIBP INSTRUCTION AT GLOBAL TALENT ISLAMIC SCHOOL PALEMBANG

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Abstract

The development of digital technology has transformed teaching methods and learning media in schools. SMP Global Talent Islamic School Palembang implements a research-based learning (RBL) model that positions students as active researchers supported by digital tools in Islamic Religious Education and Character Education (PAIBP). This study examines how digital-based RBL is planned, implemented, and evaluated, and explores its role in fostering students' active and critical learning skills. This research uses a qualitative case study approach. Data were collected through observation, interviews, and documentation, and analyzed using data reduction, data display, and conclusion drawing. Validity was ensured through prolonged engagement and credibility checks. Findings indicate that instructional planning is based on students' needs, teachers' competencies, curriculum alignment, learning instruments, and institutional support. The process integrates Islamic values, teacher professionalism, parental involvement, and responsible use of digital technology. RBL implementation includes three stages: exposure, experience, and capstone. Exposure fosters awareness and helps students define research topics. Experience is the core stage, where students conduct simple research under teacher guidance using digital tools. Capstone involves preparing and presenting digital scientific products. Evaluation covers process and outcome assessment through rubrics measuring engagement, content mastery, research quality, and learning effectiveness. Overall, digital-based RBL promotes active and critical learning aligned with 21st-century curriculum demands.

Keyword: Research-Based Learning (RBL), Digital Technology, Islamic Religious Education, and Character Education

Abstrak

Perkembangan teknologi digital telah mengubah metode pengajaran dan media pembelajaran di sekolah. SMP Global Talent Islamic School Palembang mengimplementasikan model Research-Based Learning (RBL) yang menempatkan siswa sebagai peneliti aktif yang didukung oleh perangkat digital dalam pembelajaran Pendidikan Agama Islam dan Budi Pekerti (PAIBP). Penelitian ini mengkaji bagaimana RBL berbasis digital direncanakan, dilaksanakan, dan dievaluasi, serta mengeksplorasi perannya dalam menumbuhkan keterampilan belajar aktif dan kritis siswa. Penelitian ini menggunakan pendekatan studi kasus kualitatif. Data dikumpulkan melalui observasi, wawancara, dan dokumentasi, kemudian dianalisis menggunakan reduksi data,

penyajian data, dan penarikan kesimpulan. Keabsahan data dijamin melalui keterlibatan jangka panjang dan pengecekan kredibilitas. Hasil penelitian menunjukkan bahwa perencanaan pembelajaran didasarkan pada kebutuhan siswa, kompetensi guru, keselarasan kurikulum, instrumen pembelajaran, dan dukungan institusional. Prosesnya mengintegrasikan nilai-nilai Islam, profesionalisme guru, keterlibatan orang tua, dan penggunaan teknologi digital yang bertanggung jawab. Implementasi RBL mencakup tiga tahapan, yaitu exposure, experience, dan capstone. Tahap exposure menumbuhkan kesadaran dan membantu siswa menentukan topik penelitian. Tahap experience merupakan tahap inti, di mana siswa melakukan penelitian sederhana di bawah bimbingan guru menggunakan perangkat digital. Tahap capstone melibatkan penyusunan dan presentasi produk ilmiah digital. Evaluasi mencakup penilaian proses dan hasil melalui rubrik yang mengukur keterlibatan, penguasaan konten, kualitas penelitian, dan efektivitas pembelajaran. Secara keseluruhan, RBL berbasis digital mendorong pembelajaran aktif dan kritis yang selaras dengan tuntutan kurikulum abad ke-21.

Kata Kunci: *Research-Based Learning (RBL), Teknologi Digital, Pendidikan Agama Islam dan Budi Pekerti*

INTRODUCTION

The development of digital technology has played a key role in the transformation of education in the global era. The integration of technology into learning is no longer limited to the use of teaching aids but has evolved into a learning medium in its own right. (Munir, 2020) This transformation is driving a shift in the educational paradigm from teacher-centered learning toward student-centered learning, in which students play an active role in constructing knowledge. Therefore, the utilization of digital technology has become a key indicator in improving the quality of education and a requirement for teacher professionalism in the 21st century. (Anisa Permata Sari & Munir, 2024)

These changes have a direct impact on the roles of teachers and students. Teachers are no longer positioned as the sole source of information but rather as facilitators, mediators, and innovators of learning. Digital literacy competencies are a prerequisite for teachers to be able to design interactive learning experiences, manage technology-based classrooms, and effectively utilize various digital platforms. Meanwhile, students are expected to possess critical thinking skills, be selective in filtering information, and use technology responsibly. Thus, the integration of technology into learning is not merely a technical matter but also involves strengthening cognitive, affective, and psychomotor competencies. In practice, digital technology opens up significant opportunities to deliver flexible and adaptive learning. Media such as interactive videos, educational apps, virtual simulations, and online collaborative platforms enable learning to take place both directly and indirectly. (Zainuddin, 2022) Furthermore, technology supports learning tailored to students' needs and characteristics. This is particularly relevant in efforts to improve the quality of learning, especially in subjects that have traditionally been considered uninteresting by some students. (Bimantoro et al., 2021)

In the subject of Islamic Religious Education and Character Building (PAIBP), the integration of technology is of significant urgency. PAIBP plays a strategic role in shaping students' character, morals, and spirituality. However, a common challenge is the reliance on teaching methods that tend to be conventional and lack variety. The dominance of lectures and the reliance on textbooks make learning feel monotonous and unengaging. As a result, students' interest in learning declines, and the internalization of Islamic values remains suboptimal. Therefore, innovative teaching approaches are needed that can connect religious content to students' real-life experiences through a more in-depth and experiential approach. One approach deemed relevant to these needs is RBL. (Nur'aini et al., 2024) This model positions students as active participants engaged in simple research processes as part of their learning. Through the stages of formulating problems, collecting and analyzing data, and communicating results, students not only understand the material conceptually but also develop higher-order thinking skills. RBL encourages students to connect theory with real-world contexts, thereby making learning more meaningful.

In PAIBP instruction, the application of RBL allows students to explore current issues related to Islamic values in their surrounding environment. For example, students can investigate ethical practices in daily life, the Islamic use of social media, or the implementation of tolerance in community life. (Johan et al., 2024) This process ensures that religious education is not merely theoretical but also provides direct insights. Furthermore, research activities foster students' sense of responsibility, communication skills, and critical thinking regarding various phenomena.

The RBL model, when integrated with digital technology, further enhances the effectiveness of learning. Technology serves as a means to access a wide range of literature, process data systematically, and present research findings in creative digital formats. With technological support, students can produce learning materials—such as engaging presentations—that serve not only as academic assignments but can also be utilized in the classroom learning process. This aligns with 21st-century competency requirements that emphasize critical thinking, creativity, collaboration, and communication. (Altaf Syauqy Iqbal Saifani, n.d.)

SMP Global Talent Islamic School Palembang is one of the modern Islamic educational institutions with great potential for implementing digital technology-based learning. Supportive infrastructure, innovative school policies, and students' adaptability to technology are key assets in the implementation of digital research-based learning. This approach is designed as a student research project integrated into the learning process and is even a requirement for graduation. Thus, research activities are not incidental but rather structured and ongoing. Through this learning model, students are encouraged not only to understand PAIBP theory but also to develop digital products as a way to apply their understanding. The learning experience becomes more profound because students are directly involved in the process of searching for and processing information. Learning also becomes more contextual, as students are guided to identify real-world problems and

design solutions based on Islamic values. However, the implementation of technology-based RBL is not without challenges. Teachers' readiness to design systematic research activities and make optimal use of technology is a crucial factor. Furthermore, variations in students' digital literacy skills require guidance. Without careful planning, structured implementation, and continuous evaluation, the learning process risks failing to achieve its intended goals. Therefore, the objective of this study is to comprehensively examine the planning, implementation, and evaluation of digital technology-based RBL in PAIBP instruction at SMP Global Talent Islamic School in Palembang. This study is important for providing an overview of actual practices in the field. With systematic management, digital technology-based RBL has the potential to improve the quality of PAIBP instruction, strengthen the internalization of Islamic values, and foster students who are critical, creative, and of good character.

METHOD

This study employed a qualitative approach using a case study to analyze the implementation of a digital technology-based research-based learning model in PAIBP instruction at Global Talent Islamic School Palembang. Research subjects were selected through purposive sampling and included PAIBP teachers, the school principal, the vice principal for curriculum, and eighth-grade students participating in the instruction. The study was conducted over one semester. Research instruments consisted of a semi-structured interview guide, observation sheets, and documentation. Interviews were conducted with PAIBP teachers, school administrators, and students to explore aspects of the planning, implementation, and evaluation of RBL. Observations were conducted during the learning process to examine the stages of student research, the use of digital technology, and the role of teachers as facilitators. The documentation collected included teaching modules, assessment rubrics, student research reports, and the digital technologies used. The digital platforms used included Google Docs, Canva, Microsoft PowerPoint, YouTube, and text-based AI applications to support idea exploration and report writing. Data were collected through interviews, observations, and documentation, then analyzed using Miles and Huberman's interactive model, which includes data reduction, data presentation, and drawing conclusions. Data validity was ensured through triangulation of sources and techniques. With clear procedures and technical specifications, this study can be replicated in other school contexts with adjustments to the characteristics of the learning environment (Abdussamad, 2021).

RESULTS AND DISCUSSION

The research results will be described based on interviews, observations, and documentation. As previously explained, this study employs a qualitative research approach; therefore, the researcher collected data by gathering information based on what the data sources felt, observed, and stated. In this data collection process, the researcher utilized interviews, observations, and documentation—methods necessary to understand the planning, implementation, and evaluation of the digital technology-based *research-*

based learning (RBL) model in PAIBP instruction at SMP Global Talent Islamic School Palembang.

SMP Global Talent Islamic School Palembang has implemented the Research-Based Learning (RBL) model by utilizing digital technology as part of classroom learning innovations. The *research-based learning* (RBL) model is a learning model that makes research activities the primary method in the learning process. In this model, students do not merely receive material from teachers but actively seek out and discover knowledge on their own through processes such as formulating problems, gathering information, analyzing data, and drawing conclusions. Consequently, learning becomes more meaningful as students learn through direct experience and a simple, guided scientific thinking process.

Planning a Digital Technology-Based Research-Based Learning Model in PAIBP Instruction at SMP Global Talent Islamic School Palembang

The research findings indicate that the planning of a digital technology-based *research-based learning* (RBL) model for Islamic Religious Education and Character Education (PAIBP) at Global Talent Islamic School Palembang was carried out systematically through several key aspects, namely an analysis of student needs and characteristics, teachers' understanding of the RBL model, school curriculum planning, the development of instructional materials, as well as support in the form of resources, facilities, and training.

In the initial stage, the school conducted an analysis of student needs and characteristics as the basis for determining the learning model. Based on the results of observations and interviews, students demonstrated strong academic abilities, high motivation to learn, and were quite accustomed to using digital technology. Principal Hilwa Dinda Salsabila, S.Pd, stated that students enjoy active, communicative, and challenging learning, so research activities are considered capable of developing their potential. This is also in line with what PAIBP teacher Mr. Wahyudi, A.Md, noted—he mentioned that students show enthusiasm when involved in simple research activities, such as searching for examples of how Islamic values are applied in daily life through digital sources. Observations revealed that students were quite active in using digital technology during the information-gathering process and research discussions, although they still required guidance in identifying valid sources and applying digital ethics in accordance with Islamic values.

Furthermore, the research findings indicate that teachers have a good understanding of the concepts and stages of the *research-based learning* (RBL) model. Based on interviews with the principal, Ms. Hilwa Dinda Salsabila, S.Pd, and the vice principal for curriculum, Ms. Tsabita Husna, S.Pd, it was stated that teachers have grasped the RBL stages, ranging from problem identification, data collection, and analysis to reporting research findings. This is further supported by the remarks of Mr. Wahyudi, A.Md, a PAIBP teacher, who explained that this model encourages students to discover knowledge independently

through research activities, while teachers serve as facilitators and mentors. Field observations also showed that teachers have been able to guide students through each stage of the research process and integrate Islamic values into the research-based learning process.

From a curriculum perspective, lesson planning at SMP Global Talent Islamic School Palembang integrates several curricula, namely the Merdeka Curriculum, the 21st-Century Curriculum, the Islamic Attitudes and Etiquette Curriculum, and the Talent Curriculum. However, in implementing the research-based learning (RBL) model, the school emphasizes strengthening the 21st-Century Curriculum, which focuses on developing the 4C skills: *critical thinking, creativity, collaboration, and communication* (Irawan et al., 2022). The principal explained that the RBL model was chosen because it aligns with the development of these skills. In addition, the school has established a policy that research activities are a requirement for student graduation. A PAIBP teacher added that learning materials are not only sourced from textbooks but are also linked to current issues such as digital ethics, tolerance, the environment, and social life to make learning more contextual.

Instructional planning is also realized through the development of instructional resources that support the implementation of *research-based learning*. Based on interviews with PAIBP teachers, the instructional materials used include teaching modules, ATPs, and a research guidebook compiled by homeroom teachers as a reference for both teachers and students. This research guidebook contains research objectives, stages of research activities, the structure of research proposals and reports, activity schedules, and mentoring forms. Research documentation shows that this guidebook is used as a reference in the implementation of student research. In addition to conventional learning materials, teachers also plan to use various digital platforms such as Microsoft Word for drafting research reports, YouTube and the internet as sources of information, and Canva and PowerPoint for presenting research results.

Figure 1. Research Guidebook



The research findings also indicate that the success of digital technology-based RBL planning is supported by the availability of school facilities and infrastructure. Based on interviews with the principal, the school provides facilities such as an internet connection, computers, projectors, and a dedicated room for research guidance and presentations.

Observations show that these facilities can be used by students and teachers to support research activities, from data collection to the presentation of research findings. Additionally, the school allows students to use personal devices such as laptops, iPads, or cell phones under parental supervision.

In addition to facility support, the school also conducts training for teachers and students as part of the planning and implementation of digital technology-based *research-based learning*. Based on documentation and an interview with the vice principal for curriculum, Ms. Tsabita Husna, S.Pd, she stated that teachers first undergo training in research methodology and the use of digital technology before guiding students in conducting research. This training is conducted periodically so that teachers can understand the research process and make optimal use of digital technology in their teaching. In addition, students also receive training in the use of digital technologies such as Microsoft Word and Canva to support their research activities.

Figure 2. Training in Research Methodology



Figure 3. Students Participating in Digital Technology Training



Overall, the research findings indicate that the planning of a digital technology-based *research-based learning* model at SMP Global Talent Islamic School Palembang was carried out comprehensively through collaboration among the principal, the vice principal for curriculum, and the teachers. This collaboration was evident in the formulation of curriculum policies, the development of instructional materials, the provision of facilities, and the implementation of training to support student research activities.

Implementation of a Digital Technology-Based *Research-Based Learning* Model in PAIBP Instruction at SMP Global Talent Islamic School Palembang

The research findings indicate that the implementation of the digital technology-based *research-based learning* (RBL) model in Islamic Religious Education and Character Education (PAIBP) at SMP Global Talent Islamic School Palembang was carried out systematically through three main stages—*exposure*, *experience*, and *capstone*—and was supported by the use of digital technology and collaboration among teachers.

During the *exposure* stage, teachers provided students with an initial understanding of research concepts, processes, and methodology prior to conducting the research. Homeroom teachers explained the research stages based on the school's guidebook, ranging from topic selection and problem formulation to an overview of the research process. PAIBP teachers then guided students in selecting research topics relevant to PAIBP curriculum content and Islamic values such as ethics, etiquette, and responsibility. Observation results indicate that at this stage, students begin to identify issues in their immediate environment as research topics. Interviews with students also revealed that they select research topics based on real-life phenomena they encounter at school or in the community—for example, regarding discipline in congregational prayer at school.

The *experience* stage is the core stage in the implementation of *research-based learning*, where students are directly involved in the research process. Based on interviews with the supervising teacher, research activities were conducted over approximately three months and included drafting research proposals, conducting literature reviews, developing research instruments, collecting data through observation, interviews, and questionnaires, as well as analyzing data and writing research reports. Observations showed that students actively carried out research activities such as distributing questionnaires to their classmates, conducting observations, and collecting data related to the research topic. Interviews with students M. Farhan Nazhori and Ulvandi Putra Sandi revealed that the research activities provided a challenging yet enjoyable learning experience because students could connect PAIBP material to real-world phenomena, such as research on the impact of social media use on adolescent morality or the application of the value of trustworthiness in school duty assignments. The guidance process is conducted periodically through in-person meetings at school or via digital communication platforms, and is documented in guidance logs to track the progress of students' research.

The *capstone* phase is the final stage, focused on compiling and presenting research findings. During this phase, students refine their research reports based on their advisor's guidance before presenting their findings to examiners and classmates. Interview results indicate that presentation activities serve as a means for students to practice communication skills, build self-confidence, and take academic responsibility for their research findings. Observations and documentation show that presentations are conducted using digital media such as PowerPoint, supported by school facilities including projectors and presentation screens. Additionally, presentation activities involve parents, teachers, and other students as the audience, thereby fostering a more open and appreciative learning environment.

The research findings also indicate that the use of digital technology plays a crucial role in the implementation of *research-based learning*. Students utilize digital technology to search for references online, watch educational videos on YouTube, and use digital applications to aid their understanding of research material. Based on interviews with students and field observations, technologies such as Google, YouTube, word processing applications, and design platforms like Canva are used in the process of searching for information, compiling research reports, and creating presentation materials. The use of these technologies is also supported by digital devices such as laptops and iPads that students use during the learning process. Ms. Nuraini Aritonang, S.Pd, a PAIBP teacher, explained that the use of digital technology must be done selectively and remain under teacher guidance so as not to diminish the essence of PAIBP learning, which emphasizes the development of values and character.

In addition, the implementation of *research-based learning* is also supported by collaboration among teachers. Interview results indicate that the conduct of student research involves collaboration between PAIBP teachers and teachers of other subjects, such as science, social studies, Indonesian language, and other subjects relevant to the students' research topics. This collaboration takes place from the planning stage through implementation and evaluation of the research. Teachers provide feedback based on their respective fields of expertise, thereby making the guidance and assessment of student research more comprehensive. Observations also revealed collaboration among teachers in preparing research presentation activities, such as scheduling, setting up presentation equipment, and supervising student presentations.

Overall, the research findings indicate that the implementation of the digital technology-based *research-based learning* model in PAIBP instruction at SMP Global Talent Islamic School Palembang proceeds in a structured manner through the stages of research-based learning, the utilization of digital technology, and collaboration among teachers. This implementation not only helped students understand PAIBP material in a more contextual manner but also developed their critical thinking skills, research abilities, digital literacy, and communication skills.

Evaluation of the Digital Technology-Based *Research-Based Learning* Model in PAIBP Instruction at Global Talent Islamic School Palembang

The research results show that the evaluation of the implementation of the digital technology-based *research-based learning* (RBL) model in Islamic Religious Education and Character Education (PAIBP) at Global Talent Islamic School Palembang was carried out comprehensively through three stages: evaluation of the learning process, evaluation of learning outcomes, and final evaluation of learning. During the learning process evaluation stage, teachers conducted ongoing assessments throughout the students' research activities.

Based on an interview with the school principal, the evaluation aimed not only to assess learning outcomes but also to evaluate the quality of the learning process, student

engagement, and the development of character traits such as honesty, responsibility, discipline, and religious values. An interview with PAIBP teacher Ms. Ayu Mustika, S.Pd, revealed that evaluations are conducted at every stage of the research process—from problem formulation and data collection to data analysis. Teachers assess the alignment of research topics with PAIBP curriculum content, student engagement, collaboration, and the validity of the sources used. In addition, evaluations were also conducted regarding the use of digital technology, such as digital reference sources, presentation applications, and the use of artificial intelligence (AI). Teachers guided students to use technology wisely—not merely to copy information, but to understand the content of the material being studied.

Results from interviews with students also indicate that evaluation is not solely conducted by teachers; students are actively involved through *self-assessment* to reflect on their learning process, attitudes, and responsibilities during the research. This finding is supported by observation results showing students' active engagement in the research process and the use of digital technology in learning. During the learning outcomes evaluation phase, assessment is conducted after the entire research process has been completed. Based on documentation obtained by the researcher, the evaluation was conducted using a research feasibility evaluation form that serves as the school's official assessment rubric. Interviews with PAIBP teachers, who served as evaluators, revealed that assessments were conducted objectively based on several key aspects: the alignment of the research with PAIBP learning outcomes, the utilization of digital technology, as well as students' analytical skills, the systematic organization of their reports, and their presentation skills. Observations during the presentations showed that students were able to present their research findings coherently with the help of digital media such as PowerPoint or Canva.

Teachers also provided evaluation notes to help students improve. Additionally, documentation shows that student research projects deemed acceptable are approved via an approval page and can serve as references for other students in the school library. Interview results also indicate that the implementation of the digital technology-based RBL model has a positive impact on students' understanding, as students not only grasp PAIBP material theoretically but are also able to relate it to real-world problems through research activities. This approach also fosters the development of 21st-century skills such as critical thinking, creativity, collaboration, communication, and digital literacy. However, challenges remain, such as some students' reliance on AI and a tendency to focus more on the visual presentation of media than on the depth of the material.

Figure 4. Research Feasibility Evaluation Form

FORMULIR EVALUASI KELAYAKAN
PENELITIAN SMP OTRS 25 - 26

Kategori Penelitian:
Metode Penelitian:
Penelitian Tindakan:
A. Studi Kasus
B. Studi Lapangan
C. Studi Literatur
D. Studi Riset

No	Kategori Penelitian	Skor (1-5)	Nilai
1.	Kategori penelitian	50	
2.	Metode penelitian	50	
3.	Penelitian tindakan	50	
4.	Studi kasus	50	
5.	Studi lapangan	50	
6.	Studi literatur	50	
7.	Studi Riset	50	

Nilai dan Komentar:

Peneliti A. _____
Peneliti B. _____

During the final evaluation phase of the learning process, the school conducted a comprehensive reflection on the implementation of the digital technology-based RBL model. Based on interviews with the principal and the curriculum coordinator, the implementation of this model was generally assessed as successful and effective in increasing student engagement and participation in learning. However, several challenges were still identified, including teachers' readiness to manage research-based learning, varying levels of teachers' digital literacy, limited instructional time within the curriculum structure, and the availability of supporting resources such as digital devices and internet access. From the students' perspective, the main challenge related to time management in completing their research projects. Documentation of regular teacher meetings indicates that the school conducts periodic evaluations and improvements to enhance the quality of instructional implementation. Improvement efforts include developing more systematic guidelines for implementing RBL, providing training and mentoring for teachers in the use of digital technology, strengthening collaboration among teachers, and establishing policies for the wise and responsible use of technology and AI.

Figure 5. Teachers' Regular Meeting



Overall, the research findings indicate that the implementation of a *research-based learning model* utilizing digital technology in PAIBP instruction has a positive impact on

the quality of learning. This model enhances student engagement in the learning process, deepens contextual understanding of the material, and develops critical thinking, communication, collaboration, and digital literacy skills. The use of digital technology also supports the effectiveness of learning, whether in information retrieval, data processing, or the presentation of research findings. Through continuous evaluation and reflection by schools and teachers, the implementation of the digital technology-based RBL model is expected to continue to evolve and become increasingly effective in improving the quality of learning and fostering students' character development in line with the PAIBP learning objectives.

CONCLUSION

During the planning phase, teachers consider students' interests and readiness, prepare learning materials such as instructional modules, research guides, and assessment rubrics, enhance teachers' competencies in using digital technology, align with 21st-century curriculum goals, and prepare infrastructure, teacher training, and parental involvement to support successful learning. The implementation of learning is carried out through three main stages: exposure, experience, and capstone. The exposure stage aims to introduce the learning topic and foster students' curiosity through digital media. The experience stage involves students in simple research activities by utilizing technologies such as AI, Google Docs, and YouTube to search for, process, and analyze data. The capstone stage is realized through the creation and presentation of students' scientific projects using Microsoft Word, Google Docs, PowerPoint, or Canva. The integration of digital technology at every stage supports the effectiveness of the research process and develops students' digital literacy, critical thinking skills, creativity, communication, and collaboration in line with the demands of 21st-century learning. Learning evaluation is conducted through process evaluation, outcome evaluation, and final evaluation. Process-based evaluation assesses student engagement, the development of attitudes and character, and the wise use of digital technology throughout the research process. Outcome-based evaluation is conducted using a research feasibility assessment rubric developed by the school to measure mastery of PAIBP material, analytical skills, research skills, and the digital presentation of research results. Meanwhile, the final evaluation is used to assess the overall success of the learning process, identify obstacles, and formulate improvements for future learning.

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