

Analysis of the Need for the Development of Research-Based History Learning Models in Higher Education With the TPACK Approach

Asyrul Fikri, University of Riau, Indonesia
Suarman, University of Riau, Indonesia
Isjoni, University of Riau, Indonesia
Sumarno, University of Riau, Indonesia

The Asian Conference on Education 2024
Official Conference Proceedings

Abstract

21st century learning requires the use of models that take advantage of technological advances, especially in supporting research and research. The research-based history learning model with the TPACK approach is one of the models that can be used to support history learning. The purpose of this study is to analyze the need for the development of a research-based history learning model with the TPACK approach. The research method used is R&D using only one stage, namely the analysis stage. The participants of this study consisted of 27 lecturers and 107 students. The data collection technique of this study uses observation, interview, and questionnaire dissemination techniques. The data analysis used in this study only uses qualitative data to describe the need to develop a research-based learning model with the TPACK approach in history learning. The results show that the implementation of RBL is very important to support the tridharma of lecturers and local history learning, although the needs analysis shows that the application is not yet clearly visible in the lecture materials and outputs, so it is necessary to develop a more effective and relevant model to the local context. Study program students want to use lecturers' research results as a reference, and with digital support through TPACK, learning can be more dynamic, facilitate the integration of theory with real practice, as well as improve historical thinking skills and enrich student learning experiences.

Keywords: TPACK, Research-Based Learning Model, History Learning

iafor

The International Academic Forum
www.iafor.org

Introduction

Education is one of the main pillars in building human civilization. In the current era of globalization and technological advancement, education is required to be able to adapt to rapid changes (Sadikin et al., 2023; Tolchah & Mu'ammam, 2019). The Industrial Revolution 4.0 presents new challenges and opportunities for the world of education, including in the context of learning history in higher education (Akrim, 2022; Kayembe & Nel, 2019). Automation and digitalization have become an integral part of daily life, demanding education to adapt to new methods and approaches that are more relevant and effective (Kalimullina et al., 2021; Trends et al., 2020).

One of the problems faced in history education in higher education is the lack of innovation in learning models and methods. Most of the learning is still centered on the conventional lecture method. This results in students becoming passive and not actively involved in the learning process. Students now have extensive access to information from a variety of sources, which is often more interesting and relevant than what is presented in class. In addition, many educators still face difficulties in utilizing technology effectively in history teaching. Educators tend to rely on traditional methods, such as reference books and PowerPoint presentations, without taking advantage of various digital tools and resources that can enhance student interactivity and engagement. The lack of skills and training in educational technology is often an obstacle for educators to innovate and develop more dynamic and engaging teaching methods.

To overcome this problem, it is necessary to develop a learning model that can motivate students to be actively involved in the learning process. Research-based learning (PBR) has emerged as one of the potential solutions that allows students to search, analyze, and integrate information from various sources, so that students not only master the material theoretically, but also develop critical and analytical thinking skills (Budayawati et al., 2019; Rohim et al., 2019; Rosena et al., 2024).

Research-based learning (PBR) is one of the student-centered learning (SCL) models that integrates research in the learning process (Nawawi et al., 2021; Suwito et al., 2019; Wibowo & Suryo, 2019). Therefore, PBR opens opportunities for the development of learning methods, including (Brew & Saunders, 2020; Burgess & Pande, 2005; Wessels et al., 2021): (1) learning renewal by integrating research results, (2) active participation of students in the implementation of research, (3) learning using research instruments, and (4) development of an inclusive research context (students learn procedures and research results to understand the intricacies of synthesis). The research-based learning model provides opportunities and courage for students to actively participate in the learning process (Bergmark, 2022; Suyatman, 2020). High-level learning guides students not only to master the knowledge and understanding of the course, but to be able to reach the highest level of learning, namely creation (Dewi & Primayana, 2019; Maknun, 2020).

The Technological Pedagogical and Content Knowledge (TPACK) approach can be used to strengthen the implementation of PBR. TPACK is a framework that combines knowledge of content, pedagogy, and technology to create more effective and engaging learning (Absari et al., 2020; Malik et al., 2019; Taopan, 2020). With TPACK, educators can design learning experiences that suit the needs of students in the digital era, while utilizing technology as an interactive learning tool (Agustini et al., 2019; Lisa et al., 2021; Sarwa et al., 2020). Previous research has shown that the application of TPACK in learning can increase student

engagement and motivation (Almaiah et al., 2022; Widiasari et al., 2022). By integrating technology in history learning, students can be invited to actively participate in research and collaborative projects (Macgilchrist et al., 2020; Yang & Baldwin, 2020). This not only helps students understand the material more deeply, but also prepares students to face challenges in the increasingly complex and dynamic world of work.

The development of innovative learning models can significantly improve student learning outcomes (Kwangmuang et al., 2021; Malmia et al., 2019; Supena et al., 2021). With the right approach, students not only learn to memorize historical facts, but also understand the context and implications of these historical events. Students are invited to think critically and reflectively, so that they are able to apply the knowledge gained in real life. The implementation of TPACK and PBR in history learning in higher education can also contribute to the development of a curriculum that is more responsive to the times. A curriculum designed with the needs and potential of students in mind can increase the relevance and effectiveness of history education. In addition, this approach can also help build a young generation that is more adaptive, creative, and innovative in facing global challenges.

Research conducted by Kusumawardana (2020) the application of a research-based learning model can improve student interpretation. Zahrawati and Aras (2020) said that Research-Based Learning is effective in improving student learning outcomes and learning interests. Quddus (2020) revealed that the implementation of TPACK can improve student competence. However, based on the above research, no previous researcher has analyzed the development of a research-based history learning model with the TPACK approach. Thus, the development of a research-based history learning model with the TPACK approach requires a comprehensive needs analysis. It is important to ensure that the model developed is truly in accordance with the characteristics and needs of students and the context of education in higher education. Through needs analysis, educators can determine the most effective methods, strategies, and tools to use in learning.

Method

This research uses the ADDIE development (R&D) method. The ADDIE model was chosen because it is in accordance with the situation and conditions of improving the professional competence of lecturers who require continuous evaluation in developing a model. The stages of the ADDIE method used in this study only use one stage, namely analysis. At this stage, an analysis of material concepts, analysis of the needs of lecturers and students, and analysis of learning models that have been used previously are carried out.

The data collection techniques used are observation, interviews, questionnaires, and document analysis. The questionnaire was filled out by lecturers and students with a questionnaire score using a likert scale with a score range of 1 to 5. The questionnaire used has been tested for validity and reliability so that it can be used in research. The results of the validity and reliability test of the questionnaire can be seen in table 1.

Table 1: Questionnaire Validity Test for Lecturers

No Question	r-count	r-table	Information
1	0.668	0.381	Valid
2	0.516	0.381	Valid
3	0.760	0.381	Valid
4	0.677	0.381	Valid
5	0.717	0.381	Valid
6	0.581	0.381	Valid

Table 1 shows that the overall questionnaire for lecturers has a significance value greater than the r-table of 0.381 which concludes that the questionnaire is valid and can be used in research.

Table 2: Questionnaire Validity Test for Students

No Question	r-count	r-table	Information
1	0.802	0.176	Valid
2	0.751	0.176	Valid
3	0.787	0.176	Valid
4	0.864	0.176	Valid
5	0.803	0.176	Valid

Table 2 also shows that the overall questionnaire for students has a greater significance value than the r-table of 0.176 which concludes that the questionnaire is valid and can be used in research.

Table 3: Instrument Reliability Test

Questionnaire	Cronbach's Alpha	N of Items
Lecturer	0.726	6
Student	0.708	5

Based on table 3, it can be seen that the entire questionnaire has a significance value greater than 0.05, which shows that all the questionnaires of lecturers and students can be used as questionnaires in research.

This study is only one type of data generated in this study, namely qualitative data. Qualitative data is generated during the preliminary study and model development. Qualitative data analysis is carried out through direct interpretation based on the results of observations, interviews, and questionnaire distribution.

Result

In general, the research culture in Indonesia universities has undergone development, this is shown by data sourced from SJR (Scimago Journal and Country Rank) from 2019 to 2023 shown in figure 1. Compared to five ASEAN countries, namely Singapore, Malaysia, Thailand and Viet Nam, Indonesia occupies the first position with those published in international journals indexed by Scopus. The achievements of international scientific publications indexed by Scopus come from the Ministry of Education and Culture, Research and Technology, Non-Ministerial Government Institutions, and other research and development institutions.

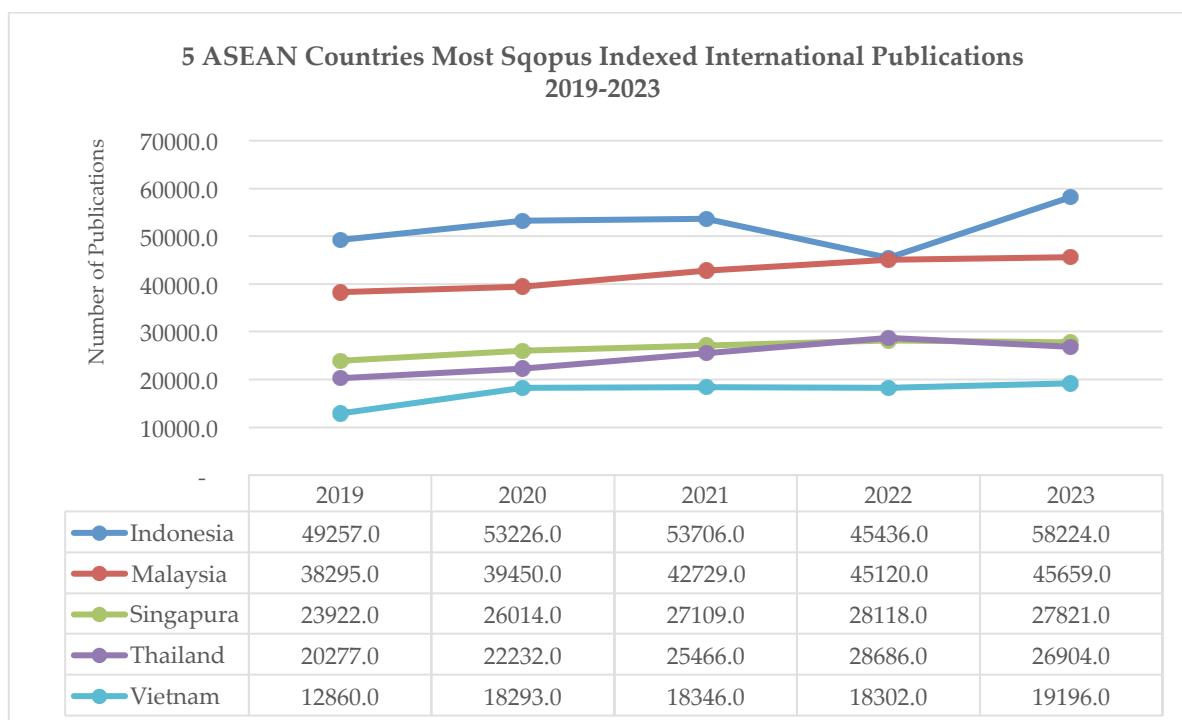


Figure 1: 5 ASEAN Countries Most Scopus Indexed International Publications 2019-2023

Although the number of publications has increased, in terms of citations, Indonesia is still below other countries. This shows that the quality of Indonesia's research is still low. The quality of publications can be calculated by the H-index. The H-index is a composite index of 5 (five) indicators, namely the number of documents, the number of documents that are worthy of citation, the number of citations, the number of citations themselves, and the number of citations per document. According to the 2023 Scientific Journal Ranking (SJR), Indonesia is ranked 38th with an H-index of 318. In the Southeast Asian region, Indonesia is still below Singapura (H-index 806), Malaysia (H-index 504), and Thailand (H-index 452).

Table 4: International Journal Citation Information 1996-2023

Country	Documents	Citable documents	Citations	Self-citations	Citations per document	H index
Singapore	432121	393012	12870663	1128547	29.78	806
Malaysia	502815	477046	6857678	1393297	13.64	504
Thailand	305015	288839	4767712	706073	15.63	452
Indonesian	376908	366528	2287188	670472	6.07	318
Vietnam	139043	132344	2021594	309286	14.54	316

The low quality of publications can be caused by internal factors and external factors. Internal factors, among others, the choice of research topics/themes are often not in line with the trend of international research topics/themes, so it is unlikely that Indonesia's research results can be input for international research. Limited research capacity (both researchers and infrastructure) also limits the type of research that can be conducted. Another internal problem that often arises is the violation of scientific ethics that causes the failure of accreditation in national and international publications. In addition, the lack of development of writing culture in higher education is a problem for the research community, especially students. This leads to a lack of ability to comprehensively analyze and interpret research results in national and international publications. From an external perspective, financial

support is also needed to facilitate and provide encouragement for students and lecturers to be able to conduct quality research.

Regarding research activities in higher education, the Higher Education Law has clearly explained, especially in articles 45 and 46. Article 45 reads: 1. Research in Higher Education is directed to develop Science and Technology, as well as improve the welfare of the community and the competitiveness of the nation; 2. Research as referred to in paragraph (1) is carried out by the Academic Community in accordance with scientific autonomy and academic culture; 3. Research as referred to in paragraph (2) is carried out based on competency and competition paths. Article 46 reads: the results of the research are useful for: a. enrichment of Science and Technology and learning; b. improving the quality of higher education and the progress of the nation's civilization; c. increasing the independence, progress, and competitiveness of the nation; d. fulfillment of strategic needs for national development; and the transformation of Indonesia society into a science-based society.

Permenristekdikti No. 44 of 2015 concerning National Standards for Higher Education also strengthens the importance of research activities in higher education. In this Permendikbud, it is explained that even the national standards for higher education consist of 24 standards, namely 8 national standards for education, 8 national standards for research and 8 national standards for service. The details of the 8 research standards are as follows: research result standards; standard of research content; standards of research processes; research assessment standards; research standards; standards of research facilities and infrastructure; research management standards; and research funding and financing standards. The emergence of this separate research standard clearly emphasizes that the formation of research universities has received a special forum in Permenristekdikti No. 44 of 2014. The comparison chart of the number of scientific publications of the five ASEAN countries above is a challenge for universities in Indonesia to increase the number of scientific publications at the international level, especially at the ASEAN level. This also has an impact on the competition of universities in the country to increase the number of scientific publications in reputable international journals and SINTA indexed journals.

From the Scimago Journal and Country Rank (2023) data, the publication of the academic community of the University of Riau in reputable international journals is ranked 32nd below UNIMED (28), UNSRI (23), UNP (16), UNILA (15), USK (11), and USU (9).

<input type="checkbox"/>	23 (3741)	Sriwijaya University	IDN		Q2
<input type="checkbox"/>	24 (3767)	Udayana University	IDN		Q2
<input type="checkbox"/>	25 (3933)	Telkom University	IDN		Q1
<input type="checkbox"/>	26 (4078)	Negeri Malang University	IDN		Q2
<input type="checkbox"/>	27 (4171)	Universitas Negeri Surabaya	IDN		Q2
<input type="checkbox"/>	28 (4238)	Universitas Negeri Medan	IDN		Q1
<input type="checkbox"/>	29 (4283)	Universitas Negeri Makassar	IDN		Q2
<input type="checkbox"/>	30 (4553)	Universitas Ahmad Dahlan Yogyakarta	IDN		Q2
<input type="checkbox"/>	31 (4579)	Jember University	IDN		Q2
<input type="checkbox"/>	32 (4609)	Universitas Riau	IDN		Q2
<input type="checkbox"/>	33 (4733)	Universitas Islam Negeri Sunan Gunung Djati	IDN		Q1
<input type="checkbox"/>	34 (4746)	Universitas Atma Jaya Yogyakarta	IDN		Q2
<input type="checkbox"/>	35 (4883)	University of Mataram	IDN		Q3

Figure 2: Ranking of the University of Riau in Scopus Publications

As an effort to realize a research university, it can be seen in the formulation of the scientific vision of the History Education Study Program of FKIP University of Riau which is in line with the vision of the faculty and the University of Riau which can be seen in the following figure.



Figure 3: Alignment of Study Program Vision With Faculty Vision and University Vision

In addition, according to Salimi and colleagues (2017) LPTK are required to connect teaching, research and community service. Research-Based Learning (RBL) has the opportunity to be a solution to revitalize and connect teaching, research and service. The integration of research in learning, hereinafter known as Research-Based Learning. Research-Based Learning (PBR/RBL) is based on the philosophy of constructivism which includes 4 (four) aspects, namely: problem-based learning and problems must arise from problems in research developed by lecturer research, learning by developing up-to-date prior knowledge based on the results of cutting-edge research, collecting, analyzing data and testing the correctness of the analysis results, and finally developing reports and publications. Realizing that PBR is very attached to the tridharma task as a lecturer, the application of PBL in courses at the University of Riau is very important.

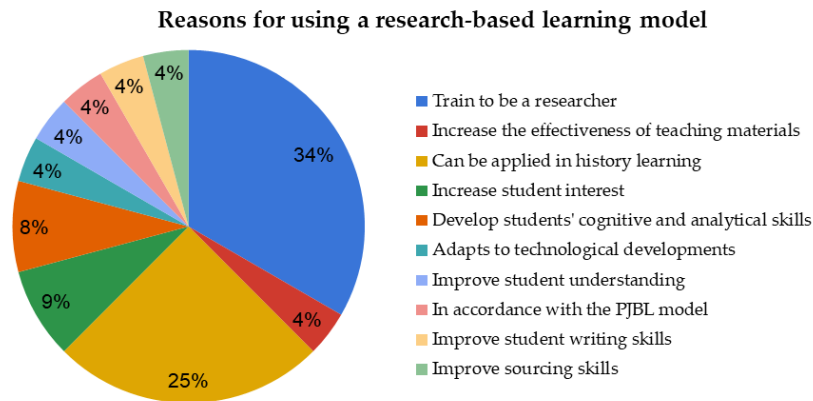


Figure 4: Reasons for the Importance of Using Research-Based Learning Models

This is the reason for the need for the development of a research-based learning model at FKIP University of Riau. Especially in the History Education study program of FKIP University of Riau. The analysis of needs in learning for the needs of lecturers and students so that the desired learning goals are achieved is a consideration to implement the right learning model. Likewise, in local history course lectures, in order for learning objectives to be achieved, better planning is needed. The selection of local history courses is an effort to achieve the vision of the Study Program, namely developing research-based history education and learning by integrating local wisdom, in this case Riau Malay Culture. A needs analysis was also carried out to see the gaps that have existed so far in learning local history courses, especially in terms of historical thinking skills possessed by students in the History Education Study Program, FKIP University of Riau.

Efforts made in identifying better learning needs are carried out by document studies, observations, and interviews. The analysis of the needs of model development was carried out by analyzing lecture equipment documents and direct interviews with lecturers and students regarding their experience so far in the lecture process.

Based on the analysis of lecture document materials for lecturers of the History Education Study Program, FKIP University of Riau, it was found that only 25% of lecturers used their research results as lecture references. Although from the results of the interview, most of the lecturers admitted that they had implemented research-based history learning, but this could not be proven in writing either from the lecture apparatus or the output or student assignments that were the output of the course and were not associated with local wisdom or elements of local history. Furthermore, from the results of the interview, an input and suggestion for model development was obtained, which needs to be considered in the aspects of implementation time and classroom management. The historical research carried out is, of course, one that can be carried out in a short time but can still produce a research study that can be accounted for. Especially research related to local history, which according to most study program lecturers, students' understanding of local history is very low and needs to be improved. For this reason, the use of digital historical sources can be an alternative in implementing the model in lectures, and also the use of digital historical sources supports the concept of Technological, Pedagogical, Content, and Knowledge (TPACK).

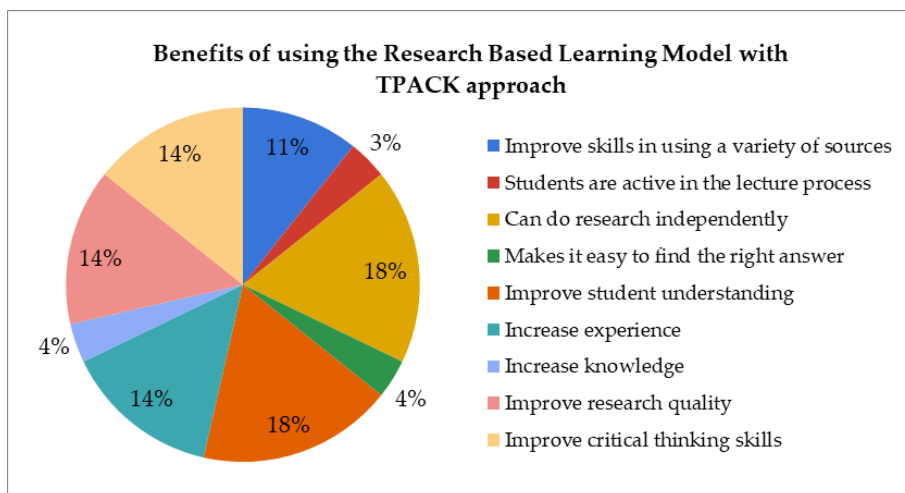


Figure 5: Benefits of Using a Research-Based Learning Model With the TPACK Approach

Furthermore, from the analysis of student needs based on the results of interviews with 15 students of the History Education study program of FKIP University of Riau related to student experience in the lecture process of study program courses, namely 65% said that most of the lecturers of the History Education study program FKIP University of Riau have used a research-based history learning model, as evidenced by giving assignments to students to search for articles on google scholar as a reference in Lecture. He further explained that the lecture experience that students want to get if they use a research-based learning model is that 35% of students want to use the research results of study program lecturers as material references or examples in the lecture process, 15% of students want to use research results or articles published in SINTA indexed journals, and 50% of students want to carry out mini research. The benefits of applying research-based history learning in lectures, according to students, are being able to distinguish historical events from non-history, being able to compose historical events chronologically, and as an exercise for working on a final project/thesis in the field of history (Cohen, 2019; List & Unifers, 2021). The students' answers are in line with the concept of historical thinking. However, related to the historical thinking skills of history education students, there needs to be a clear measurement of the level of skills obtained by students.

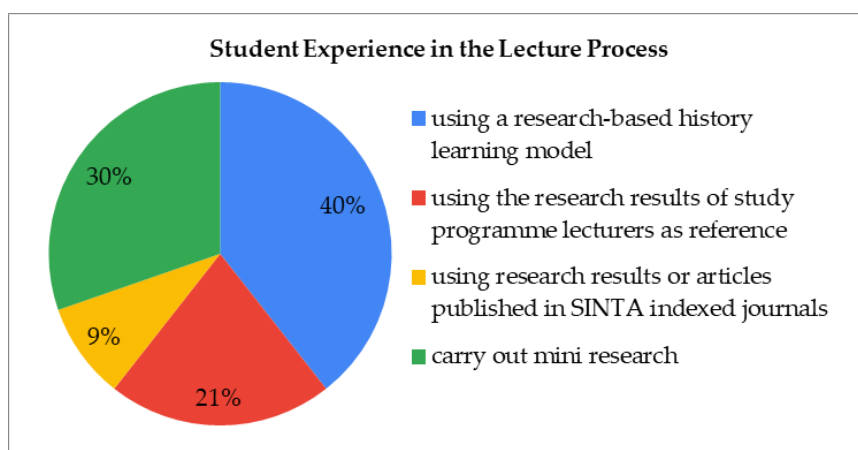


Figure 6: Student Experience in the Learning Process

The data presented in figure 7 highlights the positive reception of active learning methods, such as group discussions, presentations, and case studies, among the students. This trend underscores the need to combine a research-based history learning model using the TPACK

(Technological Pedagogical Content Knowledge) approach. By integrating technology and pedagogy with content knowledge, educators can create dynamic and engaging learning experiences that resonate with students (Mirra, 2019; Pramesworo et al., 2023). Very positive responses to the interactive method showed that students were more engaged and motivated when they were actively involved in the student learning process.

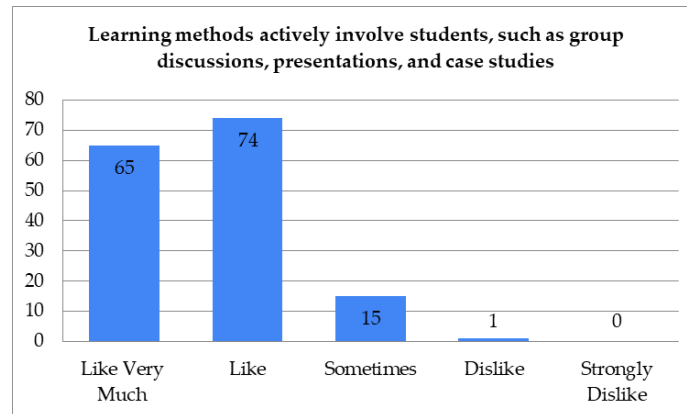


Figure 7: Learning That Actively Engages Students

Figure 8 shows that a large number of students prefer learning methods that incorporate technology, such as video, animation, and digital learning applications. With 72 students liking and 66 students really liking, it's clear that digital aids are very effective in engaging students. This highlights the need for a research-based history learning model using the TPACK (Technological Pedagogical Content Knowledge) approach. By seamlessly integrating technology with pedagogical strategies and historical content, educators can create a more immersive and interactive learning environment (Bekele, 2019). The positive response to technology-based learning underscores its potential to improve historical understanding and knowledge retention (Gyll & Hayes, 2023). Thus, adopting the TPACK approach in history education not only caters to students' preferences, but also equips students with digital literacy skills that are essential for the 21st century.

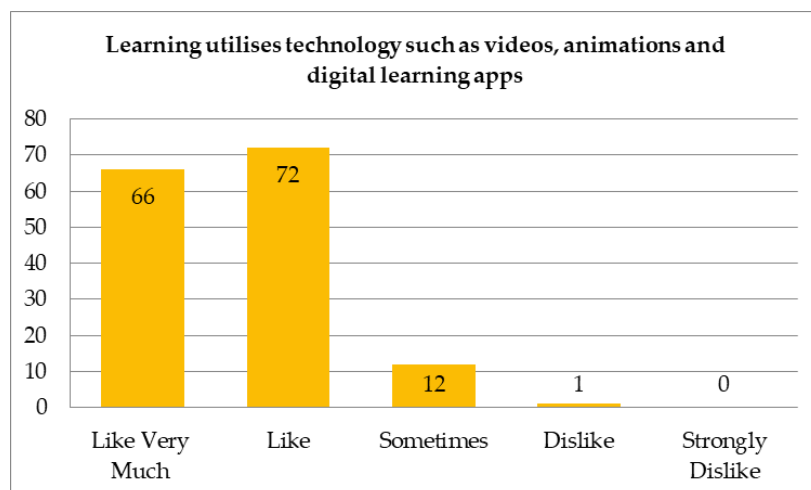


Figure 8: Use of Technology in History Learning

Figure 8 illustrates the strong preference among students to receive constructive and timely feedback from lecturers, with 106 students stating that students "Like" and 47 stating that students "Like" this approach. Such feedback is essential to encourage the academic development and growth of students. This emphasizes the importance of integrating a

research-based history learning model using the TPACK (Technological Pedagogical Content Knowledge) approach. TPACK not only enables seamless integration of technology and pedagogy, but also facilitates personalized and direct feedback through digital platforms (Chaipidech et al., 2021; Shoukat et al., 2024). By using TPACK in history education, lecturers can provide tailored feedback to meet individual learning needs, improve comprehension, and motivate students to engage more deeply with history content (Abu-Hardan et al., 2019; Sebbowa & Ng'ambi, 2020). This approach ensures that feedback is not only timely but also relevant and constructive, ultimately supporting students' academic success and fostering a more effective learning environment.

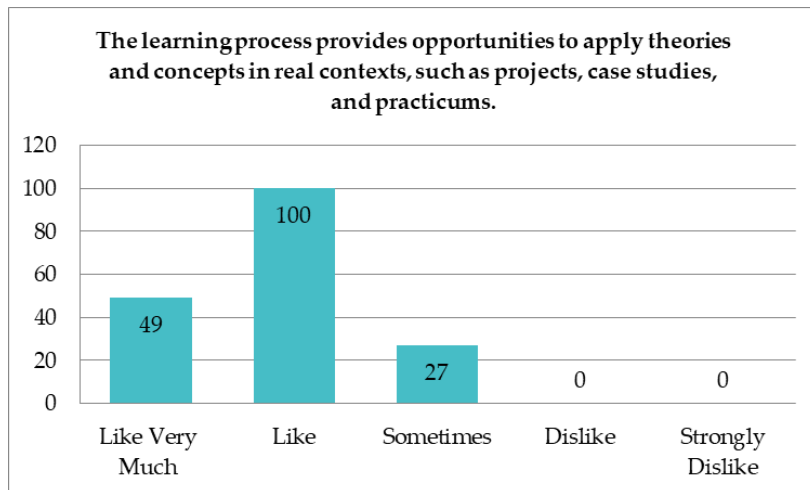


Figure 9: Application of Theory in the Real World

Figure 9 shows a clear preference among students for a learning process that allows students to apply theories and concepts in real-world contexts, with 100 students indicating that students "Like" and 49 students stating that students "Strongly Like" opportunities such as projects, case studies, and practicums. This data underscores the need to apply a research-based history learning model using the TPACK (Technological Pedagogical Content Knowledge) approach. By integrating technology with pedagogical strategies and historical content, educators can create authentic learning experiences that connect academic theory with practical applications (Smith et al., 2020). The TPACK approach facilitates the use of digital tools and resources to design projects and case studies that mirror real-world scenarios, thereby enhancing students' critical thinking and problem-solving skills.

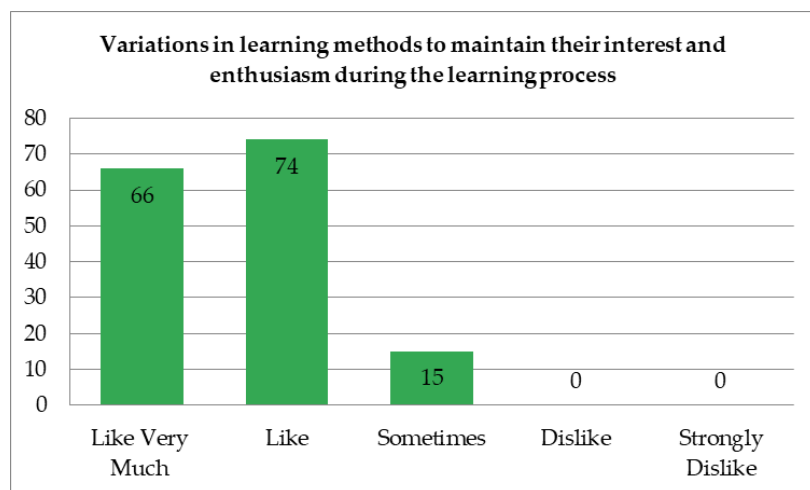


Figure 10: Use of Diverse Learning Models

Figure 10 highlights that most students value variety in learning methods, with 74 students indicating that students "Like" and 66 students stating that students "Like" students "Very Much" with diversity in learning approaches. The enthusiasm for these varied learning methods shows the importance of adopting a research-based history learning model using the TPACK (Technological Pedagogical Content Knowledge) approach. By integrating technology with pedagogical strategies and historical content, educators can offer diverse and engaging learning experiences that suit different learning styles and preferences. The TPACK framework allows teachers to combine multimedia resources, interactive activities, and innovative teaching techniques, thus keeping students' interest and enthusiasm throughout the learning process.

In addition, the basic thing behind the research on the development of this RBL model in the local history course based on the study of literature and the learning situation in this course is the limited or absence of history laboratory infrastructure which causes students to tend to always get material theoretically without real application or real practice. Through the implementation of the RBL model, it is hoped that it will contribute to learning with a new model that prioritizes student-oriented learning methods by carrying out research in learning, so that it is hoped that the limitations of practical experience and the model used so far can be minimized. Therefore, the development of a research-based history learning model to improve historical thinking skills as a prospective history teacher is an effort to achieve the vision of the History Education Study Program of FKIP University of Riau.

Discussion

The development of a research-based history learning model in higher education with the TPACK approach is an important step in improving the quality of student learning and understanding. Research by Kusumawardana (2021) shows that the application of a research-based learning model can improve students' interpretation skills, while Zahrawati and Aras (2020) found that this approach is effective in improving student learning outcomes and interests. Quddus (2019) added that the implementation of TPACK can improve the overall competence of students, thereby supporting the integration of technology in the learning process.

At the University of Riau, the importance of implementing Research-Based Learning (RBL) is emphasized to support the tridharma of lecturers, which includes teaching, research, and community service (Ikhsan et al., 2019). This is in line with the vision of the History Education Study Program which seeks to integrate local wisdom in the curriculum. Although some lecturers at FKIP Universitas Riau have claimed to implement RBL, the needs analysis shows that evidence of such implementation is still not seen in teaching materials and lecture outputs. This signals the need to develop a more effective and relevant RBL model to the local context.

Students in the History Education Study Program, University of Riau, expressed a desire to use the results of lecturers' research as a reference in learning, and realized the benefits of research-based learning in understanding history and preparing for final projects. The TPACK approach, which integrates technology, pedagogy, and knowledge content, is necessary to facilitate more dynamic and engaging learning, enable the integration of theory with real practice, and improve students' historical thinking skills.

The development of research-based learning models in higher education can be done in several ways. First, students can be asked to search for and review scientific articles published in journals as part of their course assignments. This not only encourages student involvement in research, but also improves their ability to assess academic literature and understand how research supports the theory being studied. Second, involving students in mini-research, both individually and in groups, can help them develop research and problem-solving skills. This allows students to experience first-hand the research process, from problem formulation to data analysis, and apply their knowledge in real-world contexts.

Third, lecturers can involve students in the research they conduct, giving students first-hand experience of how research is conducted in the academic world. This participation gives students the opportunity to learn directly from lecturers, while also honing practical skills that they can use in the future. Fourth, the use of lecturers' own research results as a reference in the courses taught can provide concrete examples to students about how research is carried out and applied in their field of study. It also shows students how research conducted at their own university can contribute to their learning. Fifth, integrating the research results of others as a reference in lectures can enrich students' perspectives and show them the relevance and practical application of the theories they are learning. It also helps students to better appreciate the importance of research in the development of knowledge and practice in their field.

This approach not only enriches students' learning experience, but also prepares them for the challenges in the world of work that require research skills and critical thinking skills. By leveraging the TPACK framework, teaching can become more relevant and responsive to technological developments and student needs, allowing them to thrive in an interactive learning environment and support 21st century skills. Overall, the analysis of the need to develop a research-based history learning model with the TPACK approach in higher education emphasizes the importance of creating a learning environment that supports the development of student competencies. The application of this model is expected to minimize the limitations of current practical experience, improve historical thinking skills, and contribute to the achievement of the vision of the study program.

Conclusion

The application of the Research-Based Learning (RBL) model is very important to connect teaching, research, and community service, in accordance with the demands of LPTK. At the University of Riau, the importance of RBL is emphasized in supporting the tri dharma of lecturers and local history learning, in line with the vision of the History Education Study Program that integrates local wisdom. The needs analysis at FKIP Universitas Riau shows that although some lecturers claim to have implemented RBL, the evidence is still not seen in the material and lecture output. This indicates the need to develop an RBL model that is effective and relevant to the local context. Study program students want to use the results of lecturers' research as a reference and benefit of research-based learning in understanding history and preparing for final projects. Digital support through TPACK (Technological Pedagogical Content Knowledge) is also needed to facilitate dynamic and engaging learning, which allows the integration of theory with real practice. This effort aims to improve students' historical thinking skills, maximize the use of digital resources, and enrich the student learning experience.

The limitation of this study lies in the lack of evidence that can be seen from the application of the research-based learning model (RBL) in the materials and lecture outcomes at FKIP University of Riau, despite claims from lecturers that RBL has been implemented. This indicates the need for further development of an effective RBL model that is appropriate to the local context. In addition, technological support through the TPACK approach has not been fully utilized, so the integration of theory with real practice has not been optimal. For further research, it is recommended that the development of the RBL model be carried out with a greater focus on the local context and the use of lecturer research results as a learning reference. Research should also pay attention to the maximum use of digital resources to create a more dynamic and interesting learning experience for students. The impact of this research on the world of education and higher education institutions can be in the form of improving the quality of teaching through the integration of teaching, research, and community service. By adopting the TPACK approach, institutions can enrich the curriculum and improve students' historical thinking skills, prepare them for challenges in the world of work, and support the achievement of the tri dharma of higher education.

References

- Absari, N., Priyanto, P., & Muslikhin, M. (2020). The Effectiveness of Technology, Pedagogy and Content Knowledge (TPACK) in Learning. *Jurnal Pendidikan Teknologi Dan Kejuruan*, 26(1), 43–51. <https://doi.org/10.21831/jptk.v26i1.24012>
- Abu-Hardan, F., Al-Jamal, D. A. H., & Sa'Di, I. T. (2019). TPACK: Time to be considered in teaching reading. *International Journal of Learning, Teaching and Educational Research*, 18(6), 68–95. <https://doi.org/10.26803/ijlter.18.6.5>
- Adi Slamet Kusumawardana, & Dintarini, M. (2020). Analisis Evaluatif Manajemen Pemasaran Pada Jenang Dodol Teguh Raharjo Ponorogo Perspektif Balanced Scorecard. *At-Tasyri': Jurnal Hukum Dan Ekonomi Syariah*, 1(02), 36–45. <https://doi.org/10.55380/tasyri.v1i02.48>
- Agustini, K., Santyasa, I. W., & Ratminingsih, N. M. (2019). Analysis of Competence on “tPACK”: 21st Century Teacher Professional Development. *Journal of Physics: Conference Series*, 1387(1). <https://doi.org/10.1088/1742-6596/1387/1/012035>
- Akrim, A. (2022). A New Direction of Islamic Education in Indonesia: Opportunities and Challenges in the Industrial Revolution Era 4.0. *Edukasi Islami: Jurnal Pendidikan Islam*, 11(01), 35. <https://doi.org/10.30868/ei.v11i01.1799>
- Almaiah, M. A., Alfaisal, R., Salloum, S. A., Al-Otaibi, S., Shishakly, R., Lutfi, A., Alrawad, M., Mulhem, A. Al, Awad, A. B., & Al-Marouf, R. S. (2022). The Perceptions of Student Teachers of Online Pedagogical Courses and Assessment Practices in Finnish Subject Teacher Education. *Education Sciences*, 12(6), 1–16. <https://doi.org/10.3390/educsci12060389>
- Brew, A., & Saunders, C. (2020). Making sense of research-based learning in teacher education. *Teaching and Teacher Education*, 87, 102935. <https://doi.org/10.1016/j.tate.2019.102935>
- Budayawati, L. P. I., Jovanka, V., Fitriyah, S., & Finali, Z. (2019). The analysis of the implementation of research-based learning to improve students' critical thinking skills based on their cognitive style. *IOP Conference Series: Earth and Environmental Science*, 243(1). <https://doi.org/10.1088/1755-1315/243/1/012169>
- Burgess, R., & Pande, R. (2005). Do rural banks matter? Evidence from the Indian social banking experiment. *American Economic Review*, 95(3), 780–795. <https://doi.org/10.1257/0002828054201242>
- Chaipidech, P., Kajonmanee, T., Chaipah, K., Panjaburee, P., & Srisawasdi, N. (2021). Implementation of an Andragogical Teacher Professional Development Training Program for Boosting TPACK in STEM Education. *Educational Technology & Society*, 24(4), 220–239. <https://www.jstor.org/stable/48629257>
- Cohen, D. M. (2019). *Developing Students' Skills for the 21st Century: The National History Day Model as Academic Enrichment A Qualitative Case Study*.

- Dewi, P. Y. A., & Primayana, K. H. (2019). Effect of Learning Module with Setting Contextual Teaching and Learning to Increase the Understanding of Concepts. *International Journal of Education and Learning*, 1(1), 19–26. <https://doi.org/10.31763/ijelev1i1.26>
- Gyll, S. P., & Hayes, H. (2023). Training for Better Transfer in an Online Competency-Based Higher Education Program : Using Enhanced Technology-Based Instruction to Improve Student Learning And Assessment Outcomes. *Journal of Applied Testing Technology*, 0(0), 1–11.
- Ikhsan, F. A., Kurnianto, F. A., Apriyanto, B., Nurdin, E. A., & Puji, R. P. N. (2019). The research based learning approach in Environmental Education. *IOP Conference Series: Earth and Environmental Science*, 243(1). <https://doi.org/10.1088/1755-1315/243/1/012029>
- Kalimullina, O., Tarman, B., & Stepanova, I. (2021). Transforming the reading preferences of today's youth in the digital age: Intercultural dialog. *Journal of Ethnic and Cultural Studies*, 8(3), 62–73. <https://doi.org/10.29333/ejecs/347>
- Kayembe, C., & Nel, D. (2019). Challenges and opportunities for education in the fourth industrial revolution. *African Journal of Public Affairs*, 11(3), 79–94.
- Kwangmuang, P., Jarutkamolpong, S., Sangboonraung, W., & Daungtod, S. (2021). The development of learning innovation to enhance higher order thinking skills for students in Thailand junior high schools. *Heliyon*, 7(6), e07309. <https://doi.org/10.1016/j.heliyon.2021.e07309>
- Lisa, A., Faridi, A., Bharati, D. A. L., & Saleh, M. (2021). A TPACK-in Practice Model for Enhancing EFL Students' Readiness to Teach with Ed-Tech Apps. *International Journal of Interactive Mobile Technologies*, 15(17), 156–176. <https://doi.org/10.3991/ijim.v15i17.23465>
- List, A., & Univers, H. D. T. P. S. (2021). *Reasoning Beyond History: Examining Students' Strategy Use When Completing a Multiple Text Task Addressing A Controversial Topic in Education* [The Pennsylvania State University]. <https://doi.org/10.18260/2-1-370.660-125759>
- Macgilchrist, F., Allert, H., & Bruch, A. (2020). Students and society in the 2020s. Three future 'histories' of education and technology. *Learning, Media and Technology*, 45(1), 76–89. <https://doi.org/10.1080/17439884.2019.1656235>
- Maknun, J. (2020). Implementation of Guided Inquiry Learning Model to Improve Understanding Physics Concepts and Critical Thinking Skill of Vocational High School Students. *International Education Studies*, 13(6), 117. <https://doi.org/10.5539/ies.v13n6p117>

- Malik, S., Rohendi, D., & Widiaty, I. (2019). Technological Pedagogical Content Knowledge (TPACK) with Information and Communication Technology (ICT) Integration: A Literature Review. *5th UPI International Conference on Technical and Vocational Education and Training (ICTVET 2018) Technological*, 299(Ictvet 2018), 498–503. <https://doi.org/10.2991/ictvet-18.2019.114>
- Malmia, W., Makatita, S. H., Lisaholit, S., Azwan, A., Magfirah, I., Tinggapi, H., & Umanailo, M. C. B. (2019). Problem-based learning as an effort to improve student learning outcomes. *International Journal of Scientific and Technology Research*, 8(9), 1140–1143.
- Mirra, N. (2019). From Connected Learning to Connected Teaching: Reimagining Digital Literacy Pedagogy in English Teacher Education. *English Education*, 51(3), 261–291. <https://doi.org/10.58680/ee201930076>
- Nawawi, E., Hartono, Suharman, A., & Mulyani, S. (2021). Research Based Learning Design: Teacher and Lecturer Perception Analysis. *4th Sriwijaya University Learning and Education International Conference (SULE-IC 2020)*, 513, 85–91. <https://doi.org/10.2991/assehr.k.201230.087>
- Pramesworo, I. S., Fathurrochman, I., Sembing, D., Bangkara, B. M. A. . A., & Sudrajat, D. (2023). Relevance between Blended Learning and Students' Independent Learning Curriculum : An Overview of Digital Age Education, Student and Teacher Engagement, Technological Resources. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, 9(3), 858. <https://doi.org/10.33394/jk.v9i3.8320>
- Quddus, A. (2020). Implementasi Technological Pedagogical Content Knowledge (TPACK) dalam Pendidikan Profesi Guru (PPG) PAI LPTK UIN Mataram. *Jurnal Tatsqif*, 17(2), 213–230. <https://doi.org/10.20414/jtq.v17i2.1911>
- Rohim, M. A., Dafik, Slamim, & Suciarto, B. (2019). The analysis of implementation of research based learning implementation in developing the students' creative thinking skill in solving dominating set problem. *IOP Conference Series: Earth and Environmental Science*, 243(1). <https://doi.org/10.1088/1755-1315/243/1/012143>
- Rosena, S. F., Noviani, L., & Setyowibowo, F. (2024). Development of a Research-Based Project Learning Model to Cultivate an Entrepreneurial Spirit in Entrepreneurship Subjects at SMK Muhammadiyah Pagaram. *International Journal of Post Axial: Futuristic Teaching and Learning*, 2(2), 175–187.
- Sadikin, A., Yodiansyah, H., Budiasih, Y., Sugiarti, S., & Kusnadi, I. H. (2023). ADAPTIVE HUMAN RESOURCE MANAGEMENT IN CONFRONTATION OF GLOBALIZATION'S CHALLENGES. *Jurnal Ekonomi*, 12(02), 1761–1767. <https://doi.org/10.54209/ekonomi.v12i02.2096>
- Sarwa, Simaremare, A., Hasibuan, N. I., & Priyadi, M. (2020). Teacher readiness in accommodating the TPACK framework to meet teacher competence the 21st Century. *Journal of Physics: Conference Series*, 1511(1). <https://doi.org/10.1088/1742-6596/1511/1/012041>

- Sebbowa, D. K., & Ng'ambi, D. (2020). Teaching history in ways C21st students learn – A design-based research perspective. *International Journal of Learning, Teaching and Educational Research*, 19(9), 259–280. <https://doi.org/10.26803/ijlter.19.9.14>
- Shoukat, S., Mamoon, R., & Arif, M. F. (2024). Enhancing Language Proficiency Through TPACK Model and AI Applications A Study on Effective Integration Strategies in English Language Instruction. *Pakistan Languages and Humanities Review*, 8(2), 540–554. [https://doi.org/10.47205/plhr.2024\(8-II\)47](https://doi.org/10.47205/plhr.2024(8-II)47)
- Smith, E. E., Kahlke, R., & Judd, T. (2020). Not just digital natives: Integrating technologies in professional education contexts. *Australasian Journal of Educational Technology*, 36(3), 1–14. <https://doi.org/10.14742/ajet.5689>
- Supena, I., Darmuki, A., & Hariyadi, A. (2021). The influence of 4C (constructive, critical, creativity, collaborative) learning model on students' learning outcomes. *International Journal of Instruction*, 14(3), 873–892. <https://doi.org/10.29333/iji.2021.14351a>
- Suwito, A., Purwanto, Parta, N. I., Irawati, S., & Dika, J. W. (2019). Reducing main problem of proposals undergraduate research through research-based learning activity students. *TEM Journal*, 8(4), 1213–1217. <https://doi.org/10.18421/TEM84-15>
- Taopan, L. L. (2020). Tpack Framework: Challenges and Opportunities in Efl Classrooms. *Research and Innovation in Language Learning*, 3(1), 1–22. <https://doi.org/10.33603/rill.v3i1.2763>
- Tolchah, M., & Mu'ammam, M. A. (2019). Islamic education in the globalization era; challenges, opportunities, and contribution of islamic education in indonesia. *Humanities and Social Sciences Reviews*, 7(4), 1031–1037. <https://doi.org/10.18510/hssr.2019.74141>
- Trends, N., Analysis, R., Frolova, E. V, Rogach, O. V, Ryabova, T. M., & Federation, R. (2020). Digitalization of Education in Modern Scientific Discourse: New Trends and Risks Analysis. *European Journal of Contemporary Education*, 9(2), 313–336. <https://doi.org/10.13187/ejced.2020.2.313>
- Wessels, I., Rueß, J., Gess, C., Deicke, W., & Ziegler, M. (2021). Is research-based learning effective? Evidence from a pre–post analysis in the social sciences. *Studies in Higher Education*, 46(12), 2595–2609. <https://doi.org/10.1080/03075079.2020.1739014>
- Wibowo, B. A., & Suryo, D. (2019). Research-Based History Learning Model in SMAN 2 Bantul. *International Conference on Social Science and Character Educations (ICoSSCE 2018)*, 323(ICoSSCE 2018), 226–232. <https://doi.org/10.2991/icosce-icsmc-18.2019.42>
- Widyasari, F., Masykuri, M., Mahardiani, L., Saputro, S., & Yamtinah, S. (2022). Measuring the Effect of Subject-Specific Pedagogy on TPACK through Flipped Learning in E-Learning Classroom. *International Journal of Instruction*, 15(3), 1007–1030. <https://doi.org/10.29333/iji.2022.15354a>

Yang, D., & Baldwin, S. J. (2020). Using Technology to Support Student Learning in an Integrated STEM Learning Environment. *International Journal of Technology in Education and Science*, 4(1), 1–11. <https://doi.org/10.46328/ijtes.v4i1.22>

Zahrawati, F., & Aras, A. (2020). Pembelajaran Berbasis Riset dengan Memanfaatkan Google Classroom pada Mahasiswa Tadris IPS IAIN Parepare. *Jurnal Ilmiah Iqra'*, 14(2), 143. <https://doi.org/10.30984/jii.v14i2.1253>