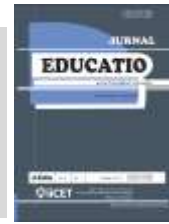




Contents lists available at [Journal IICET](https://journal.iicet.org)
Jurnal EDUCATIO (Jurnal Pendidikan Indonesia)
ISSN: 2476-9886 (Print) ISSN: 2477-0302 (Electronic)
Journal homepage: <https://jurnal.iicet.org/index.php/jppi>



Transversal competencies in augmented reality-based history learning

Elfa Michellia Karima^{*)}, Fikhen Tri Wulandari, Firza Firza, Erza Abianza
Universitas Negeri Padang, Padang, Indonesia

Article Info

Article history:

Received Jul 19th, 2024
Revised Oct 27th, 2024
Accepted Dec 31th, 2024

Keywords:

History learning
Assessment
Planning
Transversal competencies

ABSTRACT

This research is based on the weak ability of students to implement historical learning assessments due to the lack of supporting competencies. This study aims to analyze the use of transversal competencies to achieve learning objectives in learning planning in historical learning assessment courses. This study used experimental methods to analyze data. The result of the research is that transversal competencies applied in learning and delivering material in the history learning assessment course are more meaningful and more accessible to implement coupled with the history learning assessment course, which is a practical course. The application of transversal competencies in the learning planning of history learning assessment courses in History Department students will also emphasize specific skills, knowledge, values, and attitudes necessary for effective participation in supporting the student learning process.



© 2024 The Authors. Published by IICET.

This is an open access article under the CC BY-NC-SA license
(<https://creativecommons.org/licenses/by-nc-sa/4.0>)

Corresponding Author:

Elfa Michellia Karima,
Universitas Negeri Padang
Email: elfamichellia.k@fis.unp.ac.id

Introduction

Competence provides many benefits, one of which is as a benchmark for achieving learning objectives. Besides that, it can also show characteristics, skills, collaboration, knowledge, and abilities (Dewi et al., 2021). There are competencies that students should have, but they are not focused on competency-based learning; they are based on material, which makes it difficult for students to understand the course material. In the learning process, competence is essential for students to have because any material can be understood well if students have relevant competencies (Priatmoko & Dzakiyyah, 2020). Students with solid competencies tend to have a greater capacity to absorb, understand, and apply the lessons they learn. (Peng et al., 2021). This ability provides a solid foundation for learning. Abilities such as critical thinking, problem problem-solvingship, time management, and communication skills are essential in implementing the material. This skill set will help students advance in competitive times. Problems often arise when students do not understand the material related to history learning assessment courses when implementing lectures. The courses are primarily practice-making learning, as practice-making students are more emphasized on the material. Focused who cannot understand or have critical and analytical thinking skills tend to have difficulty achieving good academic performance (Tus et al., 2020). They may have difficulty understanding the subject matter, troubling adequate grades.

Competency-based education (CBE) is implemented to provide opportunities for students to master the necessary skills to achieve these competencies through their previous experience (Saaduddin, 2022). Mastering this competence will be enough for them to understand learning, especially in the history learning assessment course. Transversal competencies Provide opportunities for students to learn more, not only limited to learning

materials but competencies that can make students learn more (Raj et al., 2020). Seven transverse competencies can be applied: thinking and learning to learn, cultural competence, interaction and self-expression, taking care of oneself and managing daily life, multiliteracy, ICT competence, working life competence and entrepreneurship, participation, involvement, and building a sustainable future. Transversal competencies are an opportunity to orient educational goals toward personality and give students the expected educational outcomes (Pradana et al., 2020). One of the most important tasks of education is to form and develop competencies, especially those that are transversal, that are fundamental and ensure that students can implement their abilities. Students can evaluate arguments, make wise decisions, and analyze data using transversal skills.

With these skills, students can find problems, solve complex problems, and make logical decisions (Anugraheni, 2020). In addition, students can think out of the box, find innovative solutions, and develop new methods to solve problems. Creative students will be able to find new ways to solve problems quickly. The ability to listen well and convey ideas effectively, both orally and in writing, is a skill that students can use (Maulana et al., 2020). This ability is essential for communicating, cooperating, and explaining concepts clearly. When competent, the ability to collaborate, share ideas, support other team members, and achieve common goals is essential for students (McNair et al., 2022). This skill increases efficiency and productivity in the workplace. The ability to overcome difficulties, adapt to change, and learn from mistakes. Those with good adaptability can remain relevant and effective in the face of environmental changes. Students will also be able to set priorities, manage time, and work in a structured way to achieve goals. The competencies students possess will be beneficial for developing their knowledge (Hämäläinen et al., 2021). History learning assessment courses teach students about various approaches, methodologies, and assessment tools that can be applied to history learning. It helps them understand effective and appropriate teaching and learning processes in the context of teaching history. They also learn how to evaluate learners' understanding of historical concepts, historical skills, and their ability to analyze and evaluate events as they occur. It covers a fair and standards-based way of grading student papers, projects, essays, exams, and presentations. By implementing transversal competencies in the history learning assessment course, students will be more competent in implementing historical learning assessment materials. These students are prospective history teachers who must have competencies other than their breadth of knowledge.

Augmented reality (AR) offers an immersive and participatory experience, it is completely changing the way that we learn about history. Textbooks, lectures, and passive learning are common components of traditional history education, which can cause disinterest and a lack of comprehension. On the other hand, augmented reality (AR) technology makes it possible for students to engage and remember historical events, people, and objects through exploration and interaction.

AR provides many experiences to students such as experiences are highly engaging, encouraging students to participate actively in the learning process. Understanding History can be supported by interactive and immersive experiences lead to better retention of historical information and concepts. AR enables students to visualize and explore historical events and artifacts in 3D, promoting a deeper understanding of complex historical concepts. The utilization of Augmented Reality (AR) technology is revolutionizing the process of acquiring knowledge about history by enhancing its level of engagement, interactivity, and memorability. Through the utilization of augmented reality (AR), students have the opportunity to engage in immersive historical experiences that vividly animate the past. Augmented reality (AR) technology enables students to have a direct and immersive experience with historical landmarks, all from the comfort of their classroom. These interactive experiences allow students to investigate, examine, and comprehend the cultural, social, and historical backgrounds of these sites. AR-powered interactive timelines provide students with a distinct opportunity to explore historical events, analyze cause-and-effect linkages, and place historical developments in perspective. Through the manipulation of timelines, students can gain a visual representation of the sequence of events, recognize recurring trends, and cultivate a more profound comprehension of the intricacies of history. AR allows students to participate in meticulous, three-dimensional examinations of historical artifacts, enabling them to scrutinize complex aspects and symbolism that could have been overlooked in conventional two-dimensional depictions. This interactive encounter allows students to gain a profound understanding of the skill, cultural value, and historical relevance of artifacts, promoting a stronger bond with the past. Augmented reality (AR) technology enables the resurrection of historical individuals, enabling students to participate in simulated dialogues and acquire significant understanding of their thoughts, feelings, and motives. This novel method imbues historical individuals with human qualities, so becoming history more approachable and captivating. Engaging with historical personalities allows students to cultivate a more profound comprehension of the events that have influenced the formation of our world. By harnessing the power of Augmented Reality, history education can become more engaging, interactive, and effective, ultimately leading to a deeper understanding and appreciation of historical events and their significance.

This research is based on research that has been done and conducted by experts. The theory that is the basis for this research is Competency-Based Education (CBE), where learning should emphasize competency development according to student needs (Sholihah & Lastariwati, 2020). Learning focuses on implementing competencies to better understand the material compared to only studying material for History Department students in line with the theory of Competency-Based Education (CBE). Some of the research that has been done on competency-based learning for students includes the Contextual Framework for Developing Research Competence: Piloting a Validated Classroom Model (Jamieson & Saunders, 2020). The results of this study state that learning that prioritizes competence not only provides students with hard skills but also soft skills, which are very much needed for students' abilities. Other research states that competencies can facilitate classroom management, evaluation skills, mastery of subjects, materials, and communication skills (Hamit & Yildirim, 2020). Teachers and students need this very much in terms of readiness for the learning process. Another study titled *The Effects of Teacher Competence on Student Outcomes in Elementary Science Education* states that teacher competence (pedagogic content knowledge, self-efficacy, and teaching spirit) is positively related to student interest (Marlina et al., 2021). Three dimensions of teaching quality (cognitive activation, supportive climate, and classroom management) refer to teacher-student interaction in the classroom. The results of this study help explain the teacher's background on student learning outcomes. Competency-Based Education: Theory and Practice (Açikgöz & Babadogan, 2021) states that experts have a conceptual consensus on learning skills and outcomes. The study shows that competency demonstrations will support students' future ability development when considering student progress and measuring it with formative assessments.

This research is the latest because no one has examined the implementation of transversal competencies in planning history learning. Compared to the previous study, the research position carried out is a refinement of prior research related to the implementation of competencies in history learning so that history learning, especially history learning assessment courses, can be more meaningful where students not only learn about theory but direct practice with competency development so that student knowledge can be broader. Through the transversal competence possessed by students, students have cross-disciplinary competence. The application uses AR which makes it easier for students to understand abstract History learning. They can see problems from various points of view and use their knowledge from multiple fields to find holistic and integrated solutions. Students will also improve their critical and analytical thinking skills because they can consider problems from different points of view. This study aims to analyze the use of transversal competencies to achieve learning objectives in learning planning in historical learning assessment courses.

Method

This research uses a quantitative approach with data analysis in the form of quasi-experiments. Pseudo-experimental designs have experimental and control classes, but control classes cannot fully function to control outside variables that affect the conduct of experiments (Maciejewski, 2020). This study aims to directly test the influence of one variable on other variables and test the hypothesis of cause-and-effect relationships. The instruments used in this study were written tests in the form of pretest and posttest. The tests are in the form of questions related to learning assessment materials based on transversal competencies. There are seven indicators in the transversal competencies: thinking and learning to learn, cultural competence, interaction, self-expression, taking care of oneself and managing daily life, multiliteracy, ICT competence, working life competence, and entrepreneurship, participation, involvement, and building a sustainable future. Applying these seven indicators can be an opportunity to orient educational goals toward personality and give students the expected educational outcomes. A pretest (initial test) is a test given before the learning process or delivery of material to know the extent of knowledge possessed by students about the material to be taught. At the same time, the post-test (final test) is a test used at the end of the learning process, which aims to determine to what extent students' understanding of the material that has been learned (Supena et al., 2021). This test is carried out to determine how the initial abilities possessed by students and the abilities obtained and possessed by students after participating in learning. Researchers conduct validity and reality tests before the pretest is carried out. A validity test needs to be done to determine the accuracy of a research instrument. Reliability is done so that researchers can evaluate the consistency of measuring instruments and whether the measuring instruments in a study are reliable and remain consistent if the measurements are repeated.

In conducting data collection, researchers utilize data collection techniques in the form of tests. Tests are a series of questions, exercises, and other tools used to measure knowledge, skills, intelligence, abilities, and talents possessed by each individual and group (Supena et al., 2021). The pretest given is related to historical assessment learning materials and includes skills in making learning assessments. Then, to evaluate students' ability after being given teaching or material, the test carried out at the final stage is in the form of a post-test to find out and see the final results of application transversal competencies. Transversal competencies Providing opportunities

for students to learn more, not only limited to learning materials but competencies that can make students learn more.

Several stages were carried out in this study. The first stage is to determine the sample and population. The population in this study is all students majoring in history, with a sample of students majoring in history who take history learning assessment courses. The second stage is to determine the control group and experimental group randomly. At this stage, the researcher defines the class that will be used as a control group and the experimental group randomly in the history learning assessment course. The third stage is to give pretests to both groups to determine students' initial abilities. The pretest given to students includes learning materials for historical learning assessments and skills in making learning assessments. After giving pretests to both groups, researchers controlled the conditions so that both groups were the same, except for the experimental group's treatment, so there was no distinction between the two. The next stage, researchers, is to give post-tests to both groups to determine the student's final ability. Researchers gave posttests to both groups to see the results of applying transversal competencies in the experimental group. The last stage is data analysis to determine students' final ability. The study was conducted after obtaining results from the post-test using normalized gain or N-gain score, which aims to evaluate the effectiveness of applying transverse competencies in research.

After the calculation of the N-gain score, then a regression calculation is carried out to see if there is an effect on historical thinking skills. This is very important to find out whether the goals of learning History can be achieved through this augmented reality-based transverse competencies learning.

Result and Discussion

Findings

Based on the calculation of the N-gain score test above, it shows that the average score for the experimental class (Transverse competencies learning method) is 55.7291 or 55.8% included in the practical category, with a minimum N-gain score of 25% and a maximum value of 85.71%. Meanwhile, the average N-gain score for the control class (conventional learning method) was 36.6625 or 36.7%, including the less effective category, with a minimum N-gain score of -64.71% and a maximum of 73.68%.

Table 1 <N Gain Score>

	Mean	Minimum	Maximum
Control	36.6625	-64.71	73.68
Experiment	55.7291	25.00	85.71

Thus, it can be concluded that the Transversal competencies method is very effectively used in historical learning assessment courses. At the same time, using conventional methods limited to learning material is less effective in learning. The effectiveness of the transverse competencies method can be seen from the high average value and the wide range of minimum and maximum values on the N-gain score of the experimental class. This shows significant variation in increasing student understanding, and the approach can also help students adjust to their individual needs. Meanwhile, conventional learning methods still provide improvements, but these improvements tend to be limited in giving variations in results. The range of N-gain scores between -64.71% to 73.68% shows challenges in increasing student understanding of learning, especially in history learning assessment courses. This limited application can be an obstacle in optimizing learning processes and outcomes. Students actively participate in learning through discussions, presentations, problem-solving, and small research.

Table 2 <Indicator of Transversal Competencies in History Learning>

Transversal Competencies	Course Indicators of History Learning Assessment
Thinking and Learning to Learn	<ol style="list-style-type: none"> 1. Lecturers use varied learning methods such as discussion, individual assignments, research, or problem-solving to develop students' more complex thinking skills 2. Lecturers use various methods so that students are directly involved in solving problems or making decisions in a historical context
Cultural Competence, Interaction, and Self-Expression	<ol style="list-style-type: none"> 1. Students are allowed to learn from a variety of historical perspectives and determine the form of assessment 2. Lecturers direct students to explore historical sources from various cultures as material for assessing history learning

Transversal Competencies	Course Indicators of History Learning Assessment
Taking Care of Oneself and Managing Daily Life	1. Students are asked to group the priorities of each activity that must be carried out at the time of the assessment process
Multiliteracy	1. Provide a variety of reading resources related to historical learning assessments 2. Providing cases in differentiated assessments 3. Create a portfolio of conformity between evaluations based on learning objectives and learning outcomes
Information and Communication Technology (ICT) Competence	1. Using the application in calculating validity, reliability and analysis of question items 2. Provide case studies that must be completed by students based on digital sources 3. Create a concept map of a series of tests, measurements, assessments and evaluations
Working Life Competence and Entrepreneurship	1. Students are given the task of designing historical exhibitions that are adapted to the history curriculum in High School 2. Students analyze, synthesize, and relate historical information to the context of the world of work (history teacher)
Participation, Involvement, and Building a Sustainable Future	1. Students actively participate in learning processes such as discussions, presentations, problem-solving, and small research 2. Students are given cases related to sustainable development problems, especially in the field of history education 3. Students develop their knowledge to be able to implement it in their daily lives

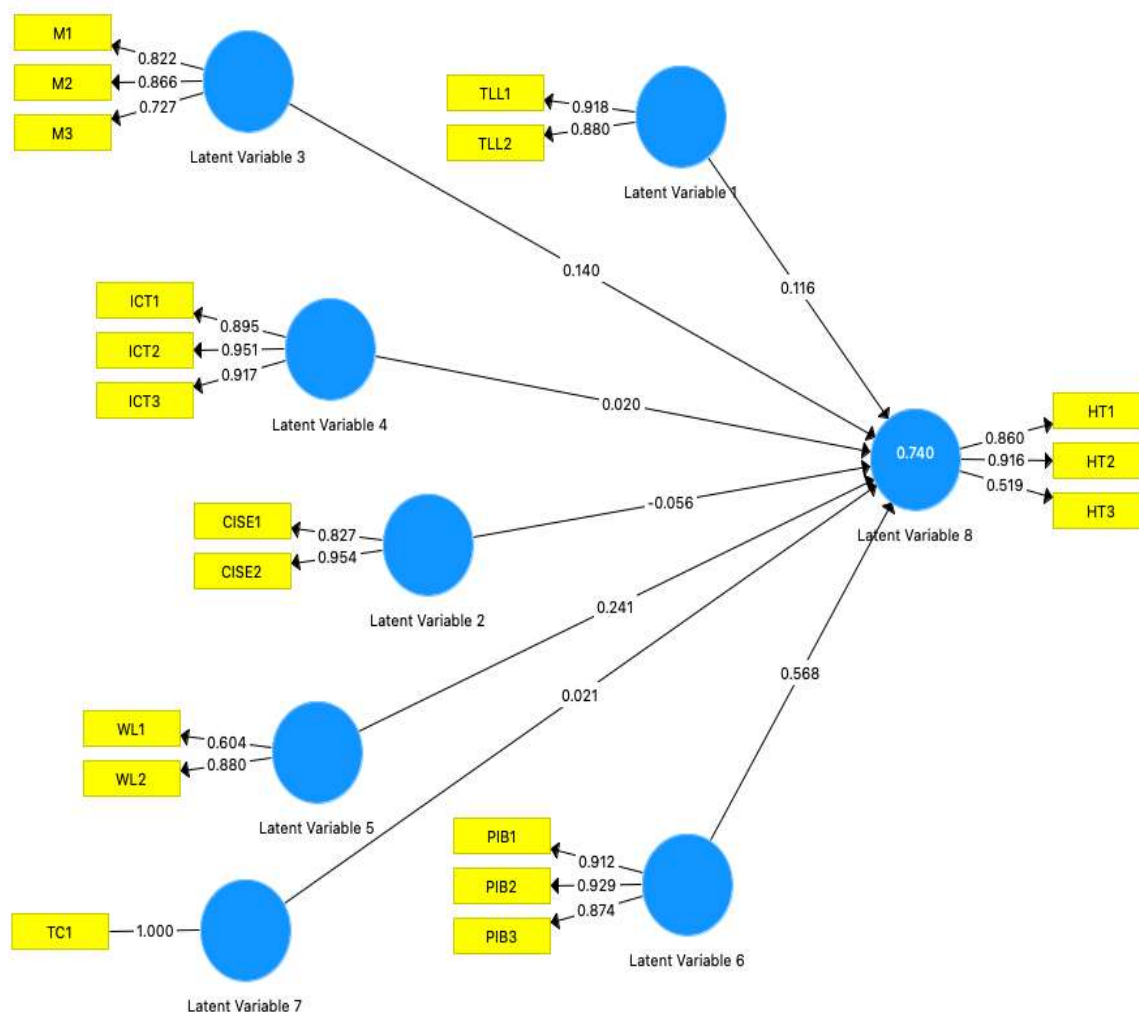


Figure 1 < Structure Model>

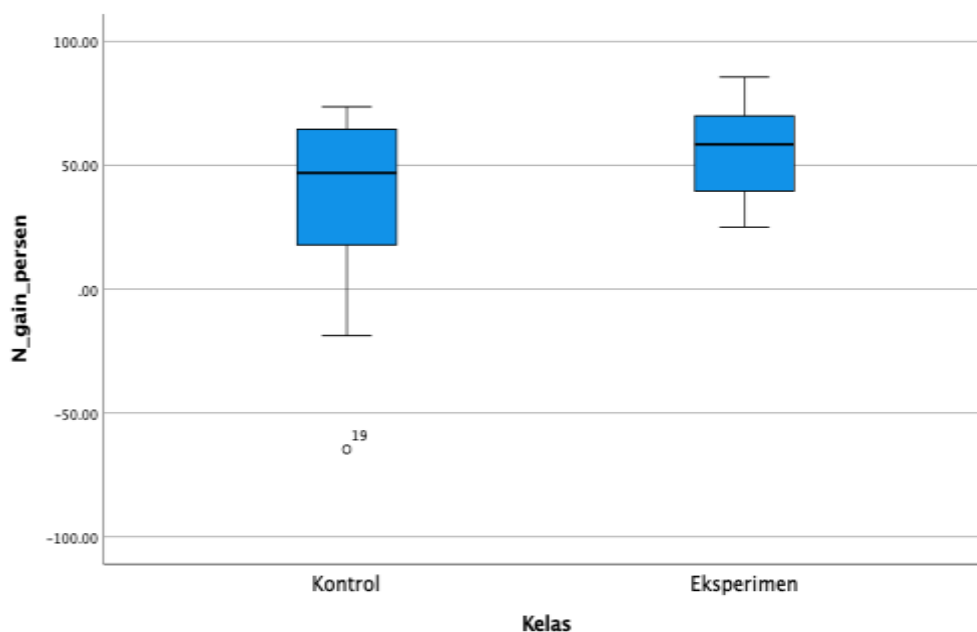


Figure 2 < Box Plot of Control and Experiment Class >

To see how the transverse competencies indicator influences students' historical thinking skills, regression is carried out. The results show that each indicator contributes to the ability to think in History.

Table 3 <Outer Loading Analysis of History Learning Indicators>

Pernyataan	Outer Loading
CISE1-Students are allowed to learn from a variety of historical perspectives and determine the form of assessment	0,827
CISE2-Lecturers direct students to explore historical sources from various cultures as material for assessing history learning	0,954
ICT1-Using the application in calculating validity, reliability and analysis of question items	0,895
ICT2-Provide case studies that must be completed by students based on digital sources	0,951
ICT3-Create a concept map of a series of tests, measurements, assessments and evaluations	0,917
M1-Provide a variety of reading resources related to historical learning assessments	0,822
M2-Providing cases in differentiated assessments	0,866
M3-Create a portfolio of conformity between evaluations based on learning objectives and learning outcomes	0,727
PIB1-Students actively participate in learning processes such as discussions, presentations, problem-solving, and small research	0,912
PIB2-Students are given cases related to sustainable development problems, especially in the field of history education	0,929
PIB3-Students develop their knowledge to be able to implement it in their daily lives	0,874
TC1-Students are asked to group the priorities of each activity that must be carried out at the time of the assessment process	1000
TLL1-Lecturers use varied learning methods such as discussion, individual assignments, research, or problem-solving to develop students' more complex thinking skills	0,918
TLL2-Lecturers use various methods so that students are directly involved in solving problems or making decisions in a historical context	0,880
WL1-Students are given the task of designing historical exhibitions that are adapted to the history curriculum in High School	0,604
WL2-Students analyze, synthesize, and relate historical information to the context of the world of work (history teacher)	0,880
HT1-Students can conduct historical research in the surroundings	0,860
HT2-Analyze historical issues and determine views based on findings	0,916
HT3-Students can analyze a historical event through several different perspectives	0,519

Discussion

The table above shows the seven indicators of Transversal Competencies and their implementation in the history learning assessment course. Thinking and Learning to Learn is related to the ability to think in learning. Students must be able to analyze, observe, and think critically to understand their learning material. In this case, lecturers apply various learning methods that vary in class, such as discussion, individual assignments, research, or problem-solving, to develop students' more complex thinking skills. With the application of these methods, it can improve the abilities and skills of students. Using various methods aims to involve students in solving problems or making decisions in a historical context. The following indicators are cultural competence, interaction, and self-expression. In the history learning assessment course, students can learn various historical perspectives and determine the assessment form. Lecturers direct students to explore historical sources from multiple cultures as material for assessing history teaching. When cultural competence, interaction, and self-expression are applied, students are expected to integrate different perspectives by emphasizing the ability to analyze historical sources in an artistic context.

Next is Taking Care of Oneself and Managing Daily Life. Lecturers implement this indicator by asking students to group the priorities of each activity that must be carried out during the assessment process. The goal is for students to identify and develop a structured and efficient plan. The existence of this priority grouping can show student responsibility in facing complex evaluation tasks. In the Transversal Competencies method, there is also a Multiliteracy indicator. In the learning assessment course, History learning assessment courses are an essential part of the development of history education students because they can help them prepare to become competent teachers. This course also helps shape students into individuals with a deep understanding and ability to apply meaningful knowledge. The skills students possess will include knowledge of facts and events and the ability to think critically, look back at what they have learned, and apply effective learning methods (Haber, 2020). Effective learning methods enhance students' understanding and engagement with historical content and give them tools to assess their own and future students' learning. Students' cognitive processes and skills to understand and engage with historical knowledge are called "thinking to learn." In this context, students must be able to involve higher-order thinking skills such as analysis, evaluation, interpretation, and conclusion (Karima et al., 2021). The main challenge for students is not to fixate on rote memorization of facts and dates alone to fulfil the curriculum of history learning assessment courses. Students are encouraged to be able to analyze primary and secondary sources critically, consider multiple perspectives, and engage in the creation of evidence-based arguments through the evaluation of historical sources. In addition, the importance of critical thinking also lies in students' understanding of identifying and overcoming biases that may arise from historical sources (Monteiro et al., 2020). Students are also asked to build arguments based on existing evidence (Richards et al., 2020).

Critical thinking is an important thing that can help students better understand the complexity of historical events and how they shape society. The ability to think critically can have a positive impact on students, one of which is on everyday life. Students can critically analyze information, which enables them to make more informed and reliable decisions and form a more holistic view of their surroundings. In addition, this ability can also be helpful for students' ability to teach. They are not only able to transfer knowledge but can also invite others to think critically about the problems presented. Students can also use critical thinking skills to see if learning objectives are achieved through their evaluations. During the evaluation process, students are involved in the assessment and can identify improvements that need to be made, set goals, and monitor their progress in achieving goals. It helps them become independent learners and take responsibility for their personal development. Transversal skills are one of the skills that can encourage students to think critically about historical sources (Tang, 2020). Through this skill, students will also be more accustomed to analyzing various perspectives and making conclusions based on existing information. Tasks such as analyzing primary and secondary sources, engaging in historical discussions, and making research-based arguments are forms of applying transversal skills. The existence of assignments in the form of analysis will also help students be more careful in evaluating primary and secondary historical sources. This makes students more accustomed and skilled in understanding historical contexts and compiling coherent narratives.

Improving students' critical thinking skills is very important to form professional and qualified teacher candidates. Students will have the ability to evaluate the information they learn critically. When students have been able to master these abilities, they no longer only understand the subject matter in depth but also develop the ability to draw solid and supportive conclusions. This expertise, if possessed by students, will impact the ability to evaluate learning in school because evaluation skills are one of the valuable assets for prospective teachers (Pittman et al., 2020). When students become educators, evaluation skills are essential. Evaluation is needed to determine whether the learning approach is practical in transferring knowledge to students. A teacher who can evaluate a lesson critically will provide satisfactory learning outcomes. In addition, student understanding will increase as the three teachers assess successful learning, creating a more effective learning

environment. It is a matter of pride for teachers when learning carried out by teachers can increase the potential of their students (Pittman et al., 2020).

The integration of competencies across disciplines trains several skills. The first skill is interpreting historical events. These skills are necessary to make learning more meaningful when combined with various skills in other disciplines. Students can understand facts and see relationships and impacts within a broader framework. Connections between fields will also help students enrich their perspectives and dig deeper into the meaning of an event. Next is the ability to write persuasive essays. This ability or skill is a place for students to express in writing about their understanding. In this case, students will be allowed to express ideas or arguments they have in-depth and convincingly. Writing persuasive essays plays an essential role in education and professionalism because, with this persuasive essay writing, students will think critically in every delivery of their ideas and ideas.

The next skill is to engage in small group discussions. This activity is essential in developing student skills, especially social ones. Through discussions, students will get used to interacting and communicating with many people and can establish group cooperation. Discussions can also familiarize students with listening to other people's opinions, deciding to make joint decisions, conveying ideas clearly, and working together to solve problems. Working together in groups trains students' teamwork skills and offers different perspectives and ways of thinking. This will also help students develop their interpersonal skills in the work environment after becoming a teacher. The last skill trained in cross-disciplinary competence is multimedia presentations (Greece et al., 2023). Multimedia presentations are an effective means of use in the learning process. Students can use various media, such as images, audio, video, and so on, to express their understanding creatively. This will undoubtedly enrich their learning experience and help develop presentation skills in the world of work. With good planning and an emphasis on students, the learning environment can be collaborative, where students can work together in groups to solve problems, conduct research, and present their research results. If students understand and implement the various skills above, they will undoubtedly have a significant favourable influence. A dynamic and creative learning environment will be created through the implementation of these skills. Students will play a more critical role in the learning process, not only being recipients of information but also being able to contribute actively to the delivery or provision of learning materials. In history learning assessment courses, students who combine cross-disciplinary skills can conduct research using reliable sources, critically evaluate historical information, and cite sources accurately and appropriately. Digital and media literacy are closely linked to information literacy and are crucial transversal competencies. Students will be able to navigate and critically evaluate the various resources available to them. In addition, instructional planning uses online databases, digital archives, and multimedia resources. In addition, students are educated to use digital tools for research and presentation, critically evaluate digital information, and find online sources.

Students can use their literacy skills to conduct historical learning assessments (Nuttall, 2021). They can analyze complex historical problems, find patterns, and create solutions. Engaging students in problem-solving activities helps them learn functional critical thinking and analytical skills, even beyond learning history. Instructional planning should allow students to conduct independent research, think about their actions, and assess themselves. Students are encouraged to take ownership of what they learn, set goals, and manage their time well. Students become lifelong learners capable of taking responsibility for their educational and professional development by acquiring self-study skills. Students will not only gain a deep understanding of historical content. Still, they will also develop essential skills that can be used in other areas of their academic and professional lives by incorporating these transversal competencies into instructional planning for evaluation subjects in history education. These abilities allow students to think critically, communicate well, work together, navigate the digital world, and solve problems.

Augmented reality (AR) technology is revolutionizing the method by which we acquire knowledge about history, enhancing its appeal, interactivity, and memorability. Through the utilization of augmented reality (AR), students have the opportunity to engage in immersive historical experiences that vividly animate the past. Students derive advantages from teachers who possess the ability to critically assess classes, leading to enhanced learning outcomes and heightened comprehension among students. The pride in good instruction is demonstrated by the potential advancement of pupils (Pittman et al., 2020). The incorporation of cross-disciplinary abilities fosters a range of talents. An example of this is the crucial importance of being able to analyze historical events, which is necessary for acquiring knowledge that is significant and valuable when integrated with expertise from other fields of study. Furthermore, students have the ability to understand information, see linkages and influences within a wider context, and enhance their viewpoints by making connections across different disciplines. Moreover, the ability to compose compelling essays enables students to effectively articulate their comprehension through written communication, a skill essential for fostering critical thinking and advancing in one's career. Participating in small group discussions is crucial for cultivating social and communication aptitude. By engaging in discussions, students have the opportunity to communicate with

their peers, collaborate in teams, actively consider diverse perspectives, reach consensus, and collectively address challenges. This promotes collaboration and interpersonal skills that are crucial for the future professional setting. In addition, multimedia presentations serve as a powerful educational tool that allows students to demonstrate their comprehension through the use of different media forms. This enhances their educational experience and cultivates valuable presentation skills that are highly sought after in the professional realm (Greece et al., 2023). Integrating these skills from other fields in the educational setting fosters a vibrant and innovative climate. Students are given the authority and ability to actively participate in the learning process, rather than simply receiving knowledge passively. During historical learning evaluations, students who possess cross-disciplinary skills are able to engage in research, critically analyze historical knowledge, and exhibit digital and media literacy. These abilities are essential for effectively navigating and evaluating a wide range of resources (Nuttall, 2021). Integrating transversal competences into instructional planning for history education enables students to engage in critical thinking, proficient communication, effective collaboration, digital literacy, and problem-solving. Moreover, the utilization of Augmented Reality (AR) technology amplifies historical education by generating immersive and unforgettable encounters for pupils.

Integrate augmented reality (AR) experiences into current historical lesson plans, ensuring that they are in line with learning goals and standards. This strategy empowers teachers to utilize augmented reality (AR) as a tool to augment existing curricula, rather than supplanting traditional teaching techniques. Promote collaboration among students in the development of augmented reality (AR) projects, cultivating cooperation, effective communication, and problem-solving abilities. Collaborative augmented reality (AR) experiences foster a sense of community and collective exploration, as students collaborate to unveil historical mysteries. Provide students with continuous advice and feedback throughout the augmented reality (AR) learning process, ensuring they remain focused and effectively solve any obstacles that may occur. This assistance system facilitates students in cultivating a more profound comprehension of historical themes and adjusting to the immersive learning environment. Consistently evaluate the influence of augmented reality (AR) on student learning results, pinpointing areas that need enhancement and adjusting the AR-based method accordingly. Through the careful monitoring of efficacy, educators may guarantee that Augmented Reality (AR) is utilized to augment student learning, rather than solely serving as a source of entertainment.

Conclusions

History learning assessment courses are more effective and efficient when combined with transversal competencies. The development of students' knowledge and skills as prospective educators and the competencies they can develop to support meaningful learning. Cross-disciplinary involvement in this course allows students to associate historical concepts with various competencies. This certainly broadens their views, knowledge, and understanding of the historical context. They can see history from multiple points of view so that the way students think is no longer monotonous.

Acknowledgments

We thank Lembaga Penelitian dan Pengabdian Masyarakat Universitas Negerin Padang for funding this work with contract number 492/UN.35/LT/2023.

References

- Açıkgöz, T., & Babadogan, M. C. (2021). Competency-Based Education: Theory and Practice. *Psycho-Educational Research Reviews*, 10(3), 67-95.
- Anugraheni, I. (2020). Analisis kesulitan mahasiswa dalam menumbuhkan berpikir kritis melalui pemecahan masalah. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 4(1), 261-267.
- Dewi, A. K., Manurung, H., Agus Yulistiyono, S., Ariningsih, K. A., Wulandari, R. W., Rif'an, A., & Harahap, E. (2021). *Strategi dan pendekatan pembelajaran di era milenial*. EDU PUBLISHER.
- Greece, J. A., Bangham, C., Wolff, J., Bryant, M., Gupte, G., & McGrath, D. (2023). The effectiveness and flexibility of practice-based teaching: A long-term, cross-disciplinary evaluation. *Public Health Reports*, 138(1), 114-122.
- Haber, J. (2020). *Critical thinking*. MIT Press.
- Hämäläinen, R., Nissinen, K., Mannonen, J., Lämsä, J., Leino, K., & Taajamo, M. (2021). Understanding teaching professionals' digital competence: What do PIAAC and TALIS reveal about technology-related skills, attitudes, and knowledge? *Computers in Human Behavior*, 117, 106672.

- Hamit, O., & Yildirim, R. (2020). Teacher perspectives on classroom management. *International Journal of Contemporary Educational Research*, 7(1), 99-113.
- Jamieson, L. M., & Saunders, M. V. (2020). Contextual Framework for Developing Research Competence: Piloting a Validated Classroom Model. *Journal of the Scholarship of Teaching and Learning*, 20(3), 1-19.
- Karima, E. M., Basri, W., & Astriani, F. (2021). Educational theory application in history learning. *Santhet: Jurnal Sejarah, Pendidikan, dan Humaniora*, 5(2), 115-124.
- Maciejewski, M. L. (2020). Quasi-experimental design. *Biostatistics & Epidemiology*, 4(1), 38-47.
- Marlina, D., Lian, B., & Eddy, S. (2021). The Effect of Teacher Competence and Student Motivation on Learning Outcomes for Students. *Jurnal Pendidikan Tambusai*, 5(2), 4988-4994.
- Maulana, A., Musthafa, I., & Hayati, T. N. (2020). The efficiency of teaching listening and speaking skills to develop students' communicative competencies. *Universal Journal of Educational Research*, 8(3), 802-808.
- McNair, T. B., Albertine, S., McDonald, N., Major Jr, T., & Cooper, M. A. (2022). *Becoming a student-ready college: A new culture of leadership for student success*. John Wiley & Sons.
- Monteiro, S., Sherbino, J., Sibbald, M., & Norman, G. (2020). Critical thinking, biases and dual processing: The enduring myth of generalizable skills. *Medical education*, 54(1), 66-73.
- Nuttall, D. (2021). What is the purpose of studying history? Developing students' perspectives on the purposes and value of history education. *History Education Research Journal*, 18(1).
- Peng, M. Y.-P., Feng, Y., Zhao, X., & Chong, W. (2021). Use of knowledge transfer theory to improve learning outcomes of cognitive and non-cognitive skills of university students: Evidence from Taiwan. *Frontiers in Psychology*, 12, 583722.
- Pittman, R. T., Zhang, S., Binks-Cantrell, E., Hudson, A., & Joshi, R. M. (2020). Teachers' knowledge about language constructs related to literacy skills and student achievement in low socio-economic status schools. *Dyslexia*, 26(2), 200-219.
- Pradana, D. A., Mahfud, M., Hermawan, C., & Susanti, H. D. (2020). Nationalism: Character education orientation in learning development. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Volume*, 3, 4026-4034.
- Priatmoko, S., & Dzakiyyah, N. I. (2020). Relevansi kampus merdeka terhadap kompetensi guru era 4.0 dalam perspektif experiential learning theory. *At-Thullab: Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, 4(1), 1-15.
- Raj, P., Venugopal, A., Thiede, B., Herrmann, C., & Sangwan, K. S. (2020). Development of the Transversal Competencies in Learning Factories. *Procedia Manufacturing*, 45, 349-354.
- Richards, J. B., Hayes, M. M., & Schwartzstein, R. M. (2020). Teaching clinical reasoning and critical thinking: from cognitive theory to practical application. *Chest*, 158(4), 1617-1628.
- Saaduddin, S. (2022). Pendidikan Berbasis Kompetensi: Implikasinya pada Kurikulum dan Pembelajaran. *Journal on Education*, 4(4), 2070-2079.
- Sholihah, T. M., & Lastariwati, B. (2020). Problem-based learning to increase competence in critical thinking and problem-solving. *Journal of Education and Learning (EduLearn)*, 14(1), 148-154.
- 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.
- Tang, K. N. (2020). The importance of soft skills acquisition by teachers in higher education institutions. *Kasetsart Journal of Social Sciences*, 41(1), 22-27.
- Tus, J., Lubo, R., Rayo, F., & Cruz, M. A. (2020). The learner's habits and their relation on their academic performance. *International Journal Of All Research Writings*, 2(6), 1-19.