Tec Empresarial
P-ISSN: 1659-2395; E-ISSN: 1659-3359

Development of the Mobile CAP Learning Model in High School for Civics Subject

Khairil Anwar Uzir[A], Sahat Siagian[B], R. Mursid[C]

Abstract

The purpose of this study is to (1) find out the Mobile CAP learning model is suitable for use in Civics Subject learning, (2) find out the Mobile CAP learning model is practically used in Civics Subject learning, (3) find out that the Mobile CAP model is effective in Civics Subject learning in Class X of Pematangsiantar City High School. The development procedure of the Mobile CAP model refers to the Plomp development model accompanied by several modifications by paying attention to the R&D research steps consisting of the initial investigation phase, the design phase, the realization phase, the testing phase, evaluation, and revision. The location of the development trial is SMA Negeri 6 Pematangsiantar. The results of the study, namely the assessment or feasibility measurement carried out by experts on the learning model and supporting device products in the form of learning models, model books, teacher manuals, student manuals, Mobile CAP media, and the evaluation of learning outcomes as a whole are valid/feasible to be used for Civics Subject learning to students. The results of the practicality test through observation of teacher and student activities during learning, one-on-one trials, limited group trials, and field trials conducted on teachers and students prove that the entire product developed is very practical to use for Civics Subject learning for students. The results of the product effectiveness test through student learning outcomes obtained an N-Gain price with a high category which means that the product developed is effectively used in the implementation of Civics Subject learning for students.

Keywords: *Mobile CAP, Learning Outcomes.*

INTRODUCTION

Education is a systematic effort that is humanistic, aiming to humanize humans by developing their human potential so that they can carry out life tasks independently and responsibly (Langeveld, 2007; Tirtarahardja & Sulo, 2005). In the context of Pancasila and Citizenship Education (Civics Subject), education not only aims to transfer knowledge, but also forms moral character, ethics, and democratic attitudes based on the values of Pancasila as the basis of the state. Civics Subject plays an important role in fostering students' activeness, creativity, and critical thinking skills in solving problems in the life of the nation and state, in accordance with the fourth precept of

[A]*Universitas Negeri Medan, Medan, Indonesia, Email: khairiluzir@gmail.com*
[B]*Universitas Negeri Medan, Medan, Indonesia*
[C]*Universitas Negeri Medan, Medan, Indonesia*

Pancasila which emphasizes deliberation and wisdom in deliberation (Sapriya, 2005).

However, the reality on the ground shows that there are various obstacles in the learning process of Civics Subject, especially in internalizing the abstract values of Pancasila related to the practice of implementing state government. Based on the results of observations at the Pematangsiantar City State High School, around 60% of students lack understanding of the basic competency material of Civics Subject which includes Pancasila values, the provisions of the 1945 Constitution, the authority of state institutions, and the structural relationship of the central and regional governments. This shows that there is a phenomenal gap between the learning objectives of Civics Subject and the results achieved in the field, which has an impact on students' low understanding of the material taught.

In addition, in learning practice, Civics Subject teachers still use many conventional methods that are teacher-centered, such as lectures, so that the active involvement of students in the learning process is minimal. Less varied learning models and the lack of use of technology-based learning media cause students' motivation and interest in learning to decrease. This is strengthened by the data on the need for learning model development questionnaire which shows that 83% of Civics Subject teachers believe that a mobile learning-based learning model can improve student learning outcomes, but 83% of teachers have never used the model in learning. This condition indicates a research gap and practice gap, namely the lack of development and implementation of innovative learning models that are in accordance with student characteristics and curriculum demands.

Along with the development of information and communication technology, mobile learning-based learning has emerged as a promising alternative to overcome these various obstacles. Mobile learning allows the learning process to take place flexibly, where students can access learning materials anytime and anywhere through mobile devices such as smartphones that have become an integral part of daily life (Ally, 2009; Klimova & Poulova, 2016). The use of mobile technology in learning not only increases accessibility, but also supports student-centered learning by giving students more control over their time, place, and how they learn.

The Problem Based Learning (PBL) learning model that focuses on solving real problems has also been shown to be effective in developing students' critical, creative, and collaborative thinking skills (Duch, 1995; Arends, 2013). PBL provides an authentic challenge to students to actively solve problems, while teachers act as facilitators or tutors who direct the learning process. The integration of mobile learning with PBL in the Mobile CAP learning model is an innovation that combines the advantages of the two approaches, namely the flexibility of mobile technology and the essence of problem-based learning. The Mobile CAP model is designed to create a learning atmosphere that activates

students physically, psychologically, and emotionally so that the learning process becomes more enjoyable and effective.

However, the development and implementation of the Mobile CAP model still faces various challenges. From a theoretical perspective, although the concepts of mobile learning and PBL have been studied separately, the integration of the two in the context of Civics Subject is still minimal, so an in-depth study is needed to develop a learning model that suits the characteristics of subjects and students. In terms of research, empirical research on the feasibility, practicality, and effectiveness of the Mobile CAP model in Civics Subject learning at the high school level, especially in areas such as Pematangsiantar City, is still limited. In addition, teachers' readiness to adopt mobile learning technology, both in terms of competence and attitude towards technology, is also an important factor that needs to be considered (Hsieh, 2017; Alhajri, 2016).

In terms of socio-cultural phenomena, the acceptance of technology in education does not only depend on the availability of devices and infrastructure, but is also influenced by attitudes, norms, and educational culture in the school environment. Resistance to change, limitations of digital literacy, and potential distractions from mobile devices are challenges that must be overcome in order for the implementation of mobile learning to run effectively and sustainably (Klimova & Poulova, 2016; Crompton & Burke, 2018).

With this background, this study seeks to fill the gap between theory, research, and phenomena by developing a Mobile CAP learning model based on mobile learning and PBL that is in accordance with the learning needs of Civics Subject in high school. This model is expected to improve student learning outcomes, increase interest and motivation to learn, and develop critical thinking and problem-solving skills that are relevant to the demands of the 21st century.

The formulation of the problem in this study is formulated based on various problems found in the learning process of Pancasila and Citizenship Education (Civics Subject) at the State High School of Pematangsiantar City. The main problems identified include the incompatibility of the learning model used by teachers with the demands of the curriculum, the lack of opportunities for students to solve problems actively because the learning method is still teacher-centered, the teacher's lack of attention to the characteristics of students in solving learning problems, the lack of variety of learning models that actively involve students, and the infrequent use of learning media to awaken student motivation, as well as low understanding and ability of teachers in developing a mobile learning-based learning model. Based on this identification, the formulation of the problems raised in this study is: first, whether the Mobile CAP learning model is feasible to be used in Civics Subject learning in class X of Pematangsiantar City High School; second, whether the Mobile CAP learning model is practical in Civics Subject learning in the classroom; and third, whether

the Mobile CAP learning model is effectively used in the context of Civics Subject learning in class X of Pematangsiantar City High School.

The purpose of this research is then formulated to answer the formulation of the problem systematically. The first goal is to determine the feasibility of the Mobile CAP learning model in Civics Subject learning in class X of Pematangsiantar City High School, so that it can be ascertained whether the model is in accordance with the characteristics of the material and the needs of students. The second objective is to find out the practicality of using the Mobile CAP learning model, which includes the ease of application of this model by teachers and the involvement of students in the learning process. The third objective is to determine the effectiveness of the Mobile CAP learning model in improving student learning outcomes in Civics Subject learning in class X of Pematangsiantar City High School, which includes aspects of improving students' material understanding, motivation, and problem-solving skills.

Thus, this study aims to develop and test a Mobile CAP learning model that integrates the Problem Based Learning approach with mobile learning technology as an innovative solution to improve the quality of Civics Subject learning. This model is expected to make a significant contribution in creating a more interactive, flexible, and student-centered learning process, so as to be able to overcome various obstacles that have been faced in learning Civics Subject, as well as supporting the achievement of expected competencies in accordance with the demands of the curriculum and the development of educational technology.

The significance of this study includes both theoretical and practical benefits. Theoretically, this research is expected to contribute to the development of education, especially in the development of innovative learning models that integrate mobile technology and problem-based learning approaches in the context of Pancasila and Citizenship Education. Practically, the results of this study can be a reference for Civics Subject teachers in choosing and developing the right learning strategies, improving student learning outcomes, and becoming a reference for other educational institutions and researchers who are interested in developing mobile technology-based learning models.

In addition, the Mobile CAP model is expected to be an adaptive learning solution in the digital era and pandemic, where limited face-to-face learning and distance learning are a necessity. With this model, the learning process can take place flexibly, interactively, and continuously, so as to improve the quality of education and the overall character formation of students.

The achievement of learning objectives is determined by the quality of learning. The quality of learning is determined by the teacher's ability to manage the learning process. Learning management is greatly influenced by the teacher's ability to master the learning model. Teachers are given the flexibility to determine a method and

choose a learning strategy and assessment system based on the predetermined curriculum. However, factors other than teachers also affect the quality of learning and the quality of learning outcomes, both directly and indirectly, including: student quality, curriculum tools, learning resource facilities, management performance of managers, school culture, and education delivery models.

The Mobile CAP learning model is able to create active learning conditions for students. This Learning Model is oriented towards the theoretical framework of constructivism. The focus of learning is on the chosen problem so that students not only learn concepts related to the problem but also scientific methods to solve the problem.

The application of the Mobile CAP learning model begins with a problem that must be solved or solved by students. These problems can come from students or also given by teachers. Students center learning around the problem. In other words, in this learning students are required to learn independently, meaning that when students learn, they can choose the appropriate way, the skills to use that method to learn and are able to control the learning process, and are motivated to complete the learning.

Development of the Mobile CAP learning model using Android media is an application process used in the learning process and aims to channel messages (knowledge, skills and attitudes) and can stimulate students' enthusiasm, attention and willingness so that the learning process occurs in an interactive and controlled manner. The model that is used and developed to be an option creates learning effectiveness. Thus, the effectiveness of the Learning Model is an effort to realize quality learning so that learning efficiency and effectiveness are realized. This development research is oriented towards product development where the development process is described as thoroughly as possible and the final product is evaluated. The development process is related to activities at each stage of development. The final product is evaluated based on the established aspects of product quality. Thus, the product of this research is a feasible, practical, and effective Mobile CAP-based Learning Model along with all the learning tools, and research instruments needed for the model development process. In the process of developing this learning model, the components of the learning model will be developed, including: (1) syntax (learning steps), (2) social system (patterns or rules that apply in collaborating, discussing, asking questions, proposing ideas when solving problems or completing learning tasks), (3) management reaction principles (teacher behavior that is allowed in guiding student work, responding to student behavior, directing and responding to opinions students), (4) support systems (classroom atmosphere, lesson plans, teacher's manuals, student books, student worksheets, learning outcome tests, (5) instructional impact and companion impact. This diagram can clarify

the framework for content development and construction of Mobile Learning-based PBL Models.

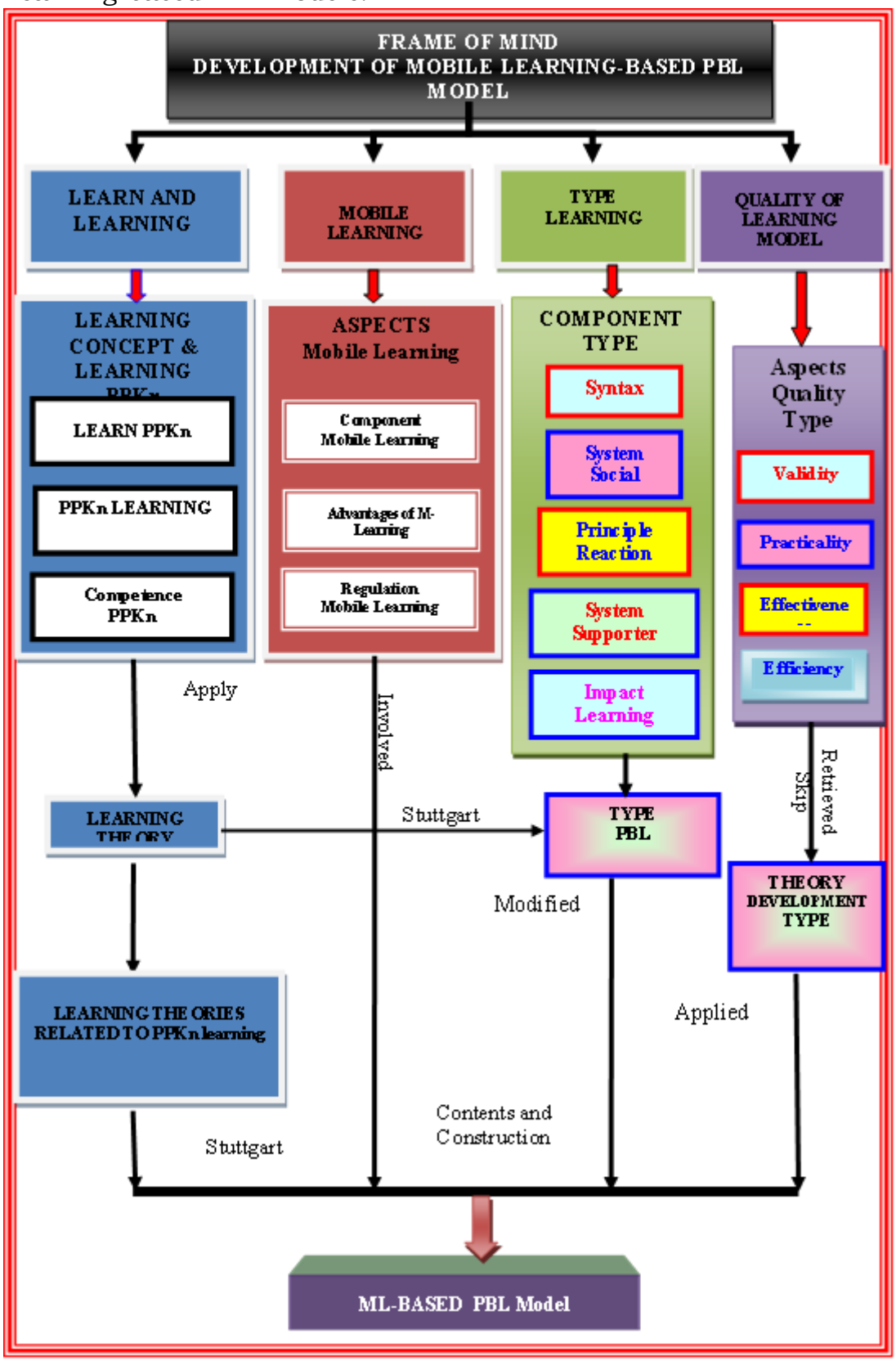

Figure 1. CAP Car Model Development Thinking Framework Diagram

Based on the theoretical study and thinking framework above, the research hypothesis can be formulated as follows:

1. The Mobile CAP learning model is suitable for use in Civics Subject learning.
2. The Mobile CAP learning model is practically used in Civics Subject learning.
3. The Mobile CAP learning model is effectively used in Civics Subject learning.

METHODS

This research uses a Research and Development (R&D) approach, which is different from traditional types of research such as experiments, surveys, or correlational analysis. R&D emphasizes practical as well as scientific contributions, with the aim of producing products that can be used effectively in an educational context. The development research paradigm according to Plomp (1999) includes four paradigms: instrumental, communicative, pragmatic, and artistic. The instrumental paradigm focuses on goal-based planning, the communicative paradigm emphasizes social involvement and consensus between parties, the pragmatic paradigm assesses the success of a product through its use in a real environment, and the artistic paradigm looks at aspects of social reality that are subjective and constructive. The development model is used through several stages, namely the conceptual model (analysis of product components and the relationship between components), the theoretical model (a framework based on theory and empirical data), the hypothetical model (the result of input from experts and practitioners through Focus Group Discussion), and the final model (a model that has been empirically tested).

The research was carried out at SMA Negeri 6 Pematangsiantar City, Jalan Cadika No. 15, Siantar Sitalasari District. The selection of the location was based on several reasons: all students have an Android device, the school has never implemented an Android-based Mobile CAP learning model in Civics Subject learning, the researcher's curiosity about the influence of the model on student learning outcomes, and the possible support for research data collection. The subjects of the study were students of classes X Merdeka 1, X Merdeka 2, and X Merdeka 3 at SMA Negeri 6 Pematangsiantar, who were targeted for data collection in the development of a metacognition-based multiliteracy learning model using the Mobile CAP model. The object of the research is in the form of learning model development products and their supporting tools, including Model Books, Teacher Manuals, Student Manuals, Student Worksheets, and learning outcome test instruments.

The development of the learning model follows the educational design development model from Plomp (1997) with modifications, and combines elements of learning development from Joyce and Calhoun (2004), Nieveen (1999), and Dick and Carey (2005). The stages of development of the Mobile CAP model consist of:

1. Initial Investigation
   In this phase, information was collected related to existing learning problems, relevant theoretical studies, and identification of the current condition of learning tools. Analysis was carried out on student conditions (learning activities and ability to use mobile learning applications), teacher conditions (learning tools used), and curriculum analysis (materials, basic competencies relevant to mobile learning). Theoretical analysis includes front-end analysis (basic learning needs), student characteristics analysis, teaching material analysis, topic/assignment analysis according to the 2013 Curriculum, as well as competency specifications and achievement indicators.
2. Design
   It consists of designing learning models and learning tools. The model design is based on the study of the supporting theories of the mobile learning-based Problem Based Learning (PBL) learning model and designing model components and model book formats. Device design includes the creation of model books, teacher manuals, student manuals, and mobile learning applications that support model implementation.
3. Realization
   Realize the learning model and supporting devices that have been designed, as the initial stage of implementation in the learning process.
4. Testing, Evaluation, and Revision
   It includes feasibility testing of instruments and devices by experts and practitioners, validation of Mobile CAP learning models and tools, assessment of the feasibility and effectiveness of models based on the experience of experts and practitioners, and field trials to obtain empirical data and revise products according to inputs.

This study has independent variables, namely the Mobile CAP learning model and the Direct Instruction learning model, as well as a bound variable, namely the learning outcomes of Civics Subject students. Variable operational definition:

Civics Subject learning outcomes are measured through objective test scores that reflect students' cognitive abilities towards learning materials. The Mobile CAP learning model adopts a PBL strategy with problem-orientation, student learning organization, situational description, evaluation, reflection, and cognitive reinforcement. The Direct Instruction learning model follows steps: conveying objectives, presentations and demonstrations, practice guidance, comprehension checks, and advanced practice opportunities.

Instruments developed include:

1. Civics Subject material expert validation instrument
2. Learning design expert validation instrument

3. Validation instruments of media experts/graphic design
4. Individual test instruments of students
5. Student small group test instrument
6. Student field trial instruments
7. Civics Subject test questions (post-test) along with indicators and grids that cover cognitive aspects from C1 to C6.

Data were analyzed to assess the validity, practicality, and effectiveness of Mobile CAP learning models, learning tools, and research instruments. The analysis was carried out on expert and practitioner assessment data (for validity), as well as field trial data (for practicality and effectiveness).

Validity Analysis: Conducted by calculating the average expert assessment score and referring to the product's eligibility criteria (score interval of 3.50–4.00 is very feasible; 3.00–3.49 is feasible without revision; etc.).

Effectiveness Analysis: Based on students' cognitive learning outcomes through tests that have been tested for validity, reliability (with Cronbach's Alpha 0.964, very reliable), the differentiability of the question items, and the level of difficulty of the question items. Statistical testing used t-test and N-gain analysis with criteria (N-gain > 0.70 high; 0.30–0.70 moderate; <0.30 low).

Practical Analysis: Carried out by measuring the consistency of the results of two measures, namely intended perceived (IP) from expert and practitioner assessments, and intended operational (IO) from observer assessments during the implementation of learning. The practicality assessment criteria using a score interval of 3.50–4.00 are very practical, 3.00–3.49 practical without improvement, and so on. Efficiency Analysis: Judging from the assessment of students individually, medium and large groups with score criteria of 0.81–1.00 very efficient, 0.61–0.80 efficient without revision, and others. Learning Outcome Analysis: Using statistical t-tests and N-gain to measure the improvement of students' learning outcomes.

Teacher Ability Analysis: Measuring teachers' ability to manage learning based on IP and IO with score criteria of 3.50–4.00 very good, 3.00–3.49 good, and so on. Analysis of Student Activities and Responses: Student activities are analyzed based on the observation of frequency and percentage of indicators of learning activities (e.g., paying attention to the teacher's explanations, asking questions, responding, conveying ideas, taking notes, doing assignments) with certain ideal criteria. A student's response is positive if ≥ 80% of the subjects give a positive response on each trial.

RESULTS AND DISCUSSION

Based on the results of the pre-survey conducted in class X of SMA Negeri 6 Pematangsiantar, only 16.67% of students have achieved the completeness of learning Pancasila and Citizenship Education (Civics Subject) with a minimum score of 75, while the remaining 83.33% have not met the completeness. This shows that the overall

learning outcomes of Civics Subject students are still relatively low and not optimal. The learning process that has taken place so far is conventional and monotonous, so it is less able to motivate students to actively participate in learning activities. The learning media used is also less relevant and not in accordance with the characteristics of students, so it does not support student involvement and in-depth understanding.

In terms of activities during learning, students were dominated by passive behaviors such as paying attention to the teacher's explanations, which reached 44.44%, while other more active activities such as asking questions, discussing, expressing opinions, taking notes, and doing assignments independently were still low, ranging from 5.56% to 16.67%. Meanwhile, teachers' activities during learning were more focused on explaining the material (33.33%) and organizing students to learn (25%), with other important activities such as summarizing material and providing reflection still very minimal, only around 8.33%. This condition shows that the learning process is still teacher-centered and does not provide space for students to play an active and critical role.

In addition, the learning tools used so far, such as Learning Implementation Plans (RPPs), teacher books, student books, and Student Worksheets (LKPD), have not been fully aligned with learning objectives that emphasize strengthening students' character, national values, and critical thinking skills. The presentation of material tends to be linear and one-way, so it does not provide opportunities for students to reconstruct understanding independently. The tasks given in the LKPD are still routine and monotonous, relying more on factual and procedural question exercises without challenging students' critical thinking skills.

The initial condition of Civics Subject learning in class X of SMA Negeri 6 Pematangsiantar shows that there is an urgent need to develop a learning model that is more interactive, contextual, and able to increase student engagement and learning outcomes. This is the basis for the development of a Mobile CAP learning model that integrates the Problem Based Learning approach with mobile learning technology, with the hope of overcoming the limitations of conventional learning and supporting the achievement of more optimal competencies.

The Mobile CAP model is designed as a development of the Problem Based Learning (PBL) approach combined with mobile learning, with an emphasis on students' concrete experiences, creativity, and critical thinking skills. The learning syntax in the Mobile CAP model consists of six systematic stages, namely orientation, learning organization, guiding investigations, differentiated responses, developing and presenting results, and analyzing and evaluating the problem-solving process. In its implementation, teachers play a multifunctional role as facilitators, motivators, trainers, feedback givers, interaction facilitators, supervisors, controllers, and learning assistants,

thereby creating a conducive learning atmosphere and supporting active student involvement.

The learning tools developed comprehensively include Learning Implementation Plans (RPP), Mobile CAP model books, teacher handbooks, student handbooks, Student Worksheets (LKPD), evaluation instruments, and integrated mobile learning applications. All of these tools are arranged systematically and contextually in accordance with the applicable curriculum, with clear and practical guidelines to make it easier for teachers and students to implement learning. Learning books are designed with a structured structure, communicative language, and content that is relevant to learners' needs and real-life contexts, thus supporting an active, creative, and meaningful learning process. Thus, the design phase of the Mobile CAP learning model and device provides a solid foundation for the implementation of innovative and effective Civics Subject learning.

The realization phase in the development of the Mobile CAP learning model has resulted in an initial prototype along with its supporting devices that serve as a reference for further development. The learning syntax of this model is applied in the classroom by involving active student activities in solving problems through case studies, discussions, experiments, and reflections. Social learning systems accommodate interaction both online and offline, both individually and in groups, thus creating a dynamic and collaborative learning environment. Teachers carry out multifunctional roles according to the reaction principle of the Mobile CAP model, including as facilitators, motivators, trainers, feedback givers, supervisors, and learning companions. A complete support system in the form of lesson plans, teacher books, student books, LKPDs, evaluation instruments, and mobile learning applications utilizes digital technology to provide a flexible, interactive, and tailored learning experience to students.

In the feasibility test phase, all development instruments and products including validation sheets, observation sheets, learning outcome tests, Mobile CAP models, model books, teacher books, student books, and mobile learning media were considered very feasible by experts with an average validity score ranging from 3.56 to 3.81 on a scale of 4. Revisions are made based on expert input to clarify model construction, improve instrument quality, improve writing, beautify the media appearance, and add instructions and exercises. This feasibility assessment shows that the Mobile CAP model prototype and its supporting devices are ready for use in empirical trials.

The practicality test phase was carried out in stages through one-on-one trials on 3 students, limited group trials on 6 students, and field trials on 30 students. Student responses to the Mobile CAP model were very positive, with an average practicality score of 3.80, 3.84, and 3.86 respectively, which was categorized as very practical. In addition, the teacher's response test to this model also showed a very practical assessment with an average score of 3.67. The positive response includes aspects of content, objectives, feasibility, technical quality, and

the attractiveness of the learning model, indicating that this model is easy to use and in accordance with the learning needs of Civics Subject in the classroom.

The effectiveness test phase showed that student activities during learning with the Mobile CAP model were very active, with an average activity score of 3.77 on various indicators such as paying attention to the teacher, reading, taking notes, and discussing between students and with teachers. The teacher's activities were also very good, with an average score of 3.60 which included providing information, observation, motivation, and guidance to students. The field test involved two classes, namely the experimental class using the Mobile CAP model and the control class using the Directed Instructional model, each totaling 36 students. The learning outcomes of students in the Mobile CAP class increased significantly from the average pretest of 43.33 to the posttest of 85.28 with an N-Gain value of 0.74 which is included in the high category. Meanwhile, the Directed Instructional class increased from an average of 43.47 pretest to 79.86 posttest with an N-Gain of 0.64 which is included in the medium category. Statistical analysis showed a significant difference in learning outcomes between the two models ($p < 0.05$), with the Mobile CAP model providing better learning outcomes. This model has also been shown to be effective in increasing students' emotional engagement, motivation, and understanding compared to the more teacher-centered Directed Instructional model.

This research presents a novelty in the form of the syntax of the Mobile CAP model which is the development of Problem Based Learning that is integrated with mobile learning. This model emphasizes concrete experiences, creativity, and critical thinking skills, as well as adapting to the challenges of access and quality of education in the digital era. The learning books developed are practical and applicative, supporting the implementation of independent and student-centered learning. The designed learning assessment system is authentic and contextual, measuring students' cognitive competencies, attitudes, and skills across the board.

The results of the development of the Mobile CAP Model are presented with a learning syntax, namely:

Table 1. Syntax of the CAP Mobile Model

Learning Model	Syntax	Stages
Problem Based Learning	1. Orient students to problems 2. Organizing students to learn 3. Guiding individual and group investigations 4. Differentiated Response 5. Develop and present works 6. Analyze and evaluate the problem-solving process	Orientation Organisation Finding Information Giving Feedback Works Evaluation and Reflection

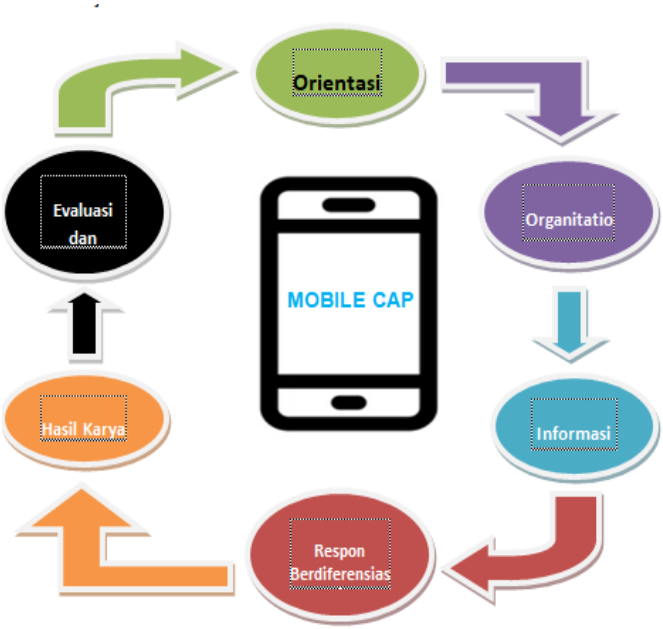

Figure 2. CAP Mobile Learning Model

The implementation of learning using the Mobile CAP model was developed based on the collaboration of *the problem-based learning model* with mobile learning. Of course, this learning model has characteristics that emphasize more concrete experiences by directly involving students in the learning process, teachers as supervisors or facilitators, and emphasizing creativity and critical thinking skills by relying on pre-owned knowledge.

By paying attention to the characteristics and syntax of the Mobile CAP learning model, the development of this model has been proven to be able to improve various important aspects in the learning process of students. The Mobile CAP model encourages students to build knowledge independently, actively engage in learning activities, and hone their thinking and collaboration skills. Structured syntax allows learning flows to take place logically and meaningfully, so that the learning experience is also transformative.

The important characteristics inherent in the learning model include various aspects that directly support the effective achievement of educational goals. These aspects include the integration of pedagogical approaches, systematic learning syntax structures, flexibility in application, and the ability of the model to adapt to the needs and characteristics of students. A good learning model must also be able to encourage active student involvement during the learning process.

However, this study has limitations, including the analysis of student needs which is only carried out in class X of SMA Negeri 6 Pematangsiantar so that it does not cover needs more broadly. The research sample was limited to one school so generalization of results needed to be cautious. Other variables that can affect learning outcomes such as learning style, motivation, and attitude have not been controlled in depth. The assessment of learning outcomes is still limited to the posttest and does not involve a thorough formative or summative

assessment. In addition, mobile media development is still limited to one application due to limited funds.

The development of the Mobile CAP learning model showed very positive results in terms of feasibility, practicality, and effectiveness, as well as making an innovative contribution to adaptive Civics Subject learning and oriented towards character development and students' critical thinking skills in the digital technology era.

CONCLUSION

Based on the results of the research on the development of the Mobile CAP learning model, it can be concluded that the model and its supporting devices including model books, teacher and student manuals, Mobile CAP media, and evaluation instruments are suitable for use in learning Pancasila and Citizenship Education (Civics Subject). Practicality tests show that this product is very practical to apply, as evidenced by the observation of teacher and student activities and various trials from one to another in large groups. Furthermore, the effectiveness test using the high category N-Gain value confirmed that the Mobile CAP model was effective in improving student learning outcomes in Civics Subject learning.

The implications of these findings are broad and important. First, in terms of learning models, Mobile CAP provides a structured and flexible framework that allows teachers to create an active, interactive, and meaningful learning atmosphere. This model supports the development of students' critical, creative, and collaborative thinking skills and strengthens the role of teachers as adaptive and innovative learning facilitators and companions. With a clear and directed syntax, teachers can adjust learning strategies to student characteristics and class conditions, so that the learning process becomes more effective and relevant to the needs of students.

Second, for students, the Mobile CAP model contributes to forming strong character and civic awareness through contextual and experiential Civics Subject learning. The use of mobile technology allows students to learn independently, broaden their understanding of Pancasila values and their active role as citizens, as well as increase emotional engagement and motivation to learn. Thus, Civics Subject learning is not only a transfer of knowledge, but also the formation of holistic civic attitudes and competencies.

Third, from the side of school institutions, the Mobile CAP model provides convenience and flexibility in the delivery of learning materials. Access to materials via mobile devices allows learning to take place anytime and anywhere, overcoming space and time constraints. This model also facilitates teachers in efficiently monitoring and evaluating student learning progress through digital platforms, thereby improving the overall quality of learning management.

Based on these results and implications, it is recommended that school principals pay serious attention by providing training for teachers in developing and implementing valid, practical, and effective

learning models, including the development of supporting tools such as model books, teaching materials, media, and evaluation instruments. Teachers also need to improve their professional abilities in designing and implementing learning models that are able to increase student activities and engagement during the learning process. In addition, for future researchers who use a similar approach, it is recommended to minimize the weaknesses found in this study, such as sample limitations and other influence variables, in order to obtain more comprehensive results and broader generalizations.

This research emphasizes the importance of selecting and developing learning models that are in accordance with the characteristics of students and the learning context, as well as making optimal use of technology to improve the effectiveness and quality of education, especially in Civics Subject learning which plays a strategic role in shaping students' character and citizenship.

REFERENCE

Alhajri, R. (2016). Prospects and Challenges of Mobile Learning Implementation: A Case Study. *Journal of Information Technology & Software Engineering*, *06*(05).

Ally, M. (2009). *Mobile Learning: transforming the delivery of education and training*. Quebec: AU Press.

Alma, B. (2008). *Professional Teachers Master Methods and Teaching Skills*. Bandung: Alfabeta.

Amir, M. T. (2009). *Educational Innovation Through Problem Based Learning*. Jakarta: Kencana Prenada Media Group.

Arends, R. (2008). *Learning to Teach*. New York: McGraw Hill Company

Arikunto, S., (2008). *Classroom Action Research*. Jakarta: Bumi Aksara.

Azra, H., & Hidayat. (2010). *Civic Education*. Jakarta: Prenada Media Group

Balaji, A. P., Bhuvaneswari, S., Raj, L. S., Bupesh, G., Meenakshisundaram, K. K., & Saravanan, K. M. (2022). A review on the potential species of the zingiberaceae family with anti-viral efficacy towards enveloped viruses. *J Pure Appl Microbiol*, *16*(2), 796-813.

Bicknell-Holmes, T., & Seth Hoffman, P. (2000). Elicit, engage, experience, explore: Discovery learning in library instruction. *Reference services review*, *28*(4), 313-322.

Branson, M. S. (1999). *Making the Case for Civic Education*: Where We Stand *at the End of the 20th Century*. Washingthon: CCE

David, B. (1999). *The Challenge of Problem Based Learning*: London: Kogan Page.

Cholisin, S. M. (2000). *IKN – PKN*. Jakarta: Open University.

Dewey, J. (1997). *Democracy and education*. New York: Simon and Schuster.

Dick, W., & Carey, L. (1996). *The systematic design of instruction*. New York: Harper Collins College Publishers.

Dimyati, M. (2008). *Learning and Learning*, Jakarta: Rineka Cipta.

Gagné, R. M. (2007). *The Condition of Learning and Theory of Instruction*. New York: Holt. Rine Hart and Winston.

Gall, M., Gall, J., & Borg, R. (2007). *Educational Research*, New York. Pearson Educational, Inc.

Gezgin, D. M. (2019). The effect of mobile learning approach on university students' academic success for database management systems course. *International Journal of Distance Education Technologies, 17*(1), 15–30.

Hashemi, M., Azizinezhad, M., Najafi, V., & Nesari, A. J. (2011). *What is mobile learning? Challenges and capabilities.* Social and Behavioral Sciences, 30, 2477–2481.

Joyce, B., & Weil, M. (2009). *Models of Teaching*. New York: Prentice-Hall, Inc.

Ministry of Education and Culture. (2014). *Teacher Training Materials for Curriculum Implementation 2013 Academic Year 2014/2015*. Jakarta: BPSDMP and PMP.

Keskin, N. Ö., Yamamoto, G. T., Traxler, J., Demiray, U., & Royle, K. (2012). A Multiplatform M-Learning System for More Qualified Courses. *International Future-Learning Conference on Innovations in Learning for the Future 2012: e-Learning Nov 14-16, 2012, Istanbul, TURKEY.*

Kilpatrick, W. H. (1951). *Philosophy of Education*. New York: The Mcmillan Company.

Klimova, B., & Poulova, P. (2016). Mobile learning in higher education. *Advanced Science Letters, 22* (5–6), 1111–1114. https://doi.org/10.1166/asl.2016.6673

Kneller, G. F. (2000). *Foundations of Education*. New York: John Willey & Son Inc.

Lukman.S, Nurdiaman, Salikun. (2017). *Civic Education*: Center for Curriculum and Books, IAARD, Ministry of Education. Jakarta.

Lu'mu, L. M. (2017). Learning media of applications design based android mobile smartphone. *International Journal of Applied Engineering Research*, *12*(17), 6576-6585.

Maftuh, B. (2008). Internalization of Pancasila Values and Nationalism Through Civic Education. *Journal of Educationist, II*(2).

Mergendoller, J. R., Maxwell, N. L., & Bellisimo, Y. (2006). The effectiveness of problem-based instruction: A comparative study of instructional methods and student characteristics. *Interdisciplinary journal of problem-based learning*, *1*(2), 49-69.

Mulyasa, E. (2011). *Character Education Management.* Jakarta: Bumi Aksara

Mulyasa, E. (2013). *Development and implementation of curriculum thinking*. Bandung: Rosdakarya.

Nurdyansyah, N., Rais, P., & Aini, Q. (2017). *The Role of Education Technology in Mathematics of Third Grade Students in MI Ma'arif Pademonegoro Sukodono. Madrosatuna: Journal of Islamic Elementary School, 1*(1), 37-46.

Ortiz, S., & Green, M. (2019). Trends and patterns of mobile learning: A study of mobile Learning Management System access. *Turkish Online Journal of Distance Education, 20*(1), 161–176.

Pidarta Made, (2007). *The Foundations of Education*. Jakarta: Rineka Cipta.

Prawiradilaga, Dewi Salma. (2012). *Educational Technology Insights*. Jakarta: Prenada Media

Rasmussen L. Karen Shivers, Davidson, (2006). V, Gayle & Web Based: *Design, Implementation, and Evaluation.* New Jersey: Pearson Education.

Russian. (2010). *Learning Models to Develop Teacher Professionalism*. Jakarta: Rajawali Press.

Rusmono. (2012). *Learning strategies with Problem Based Learning are necessary*. Bogor: Ghalia Indonesia

Smeyers, P., Depaepe, M., & Keiner, E. (Eds.). (2013). *Educational research: the importance and effects of institutional spaces*. Springer Netherlands.

Sumantri, Numan. (2001). *Social Studies Education Reform*. Bandung: Rosda Karya.

Sumartini. (2018). *Pancasila and Citizenship Education*: A Teacher's Book. Jakarta: Ministry of Education and Culture.

Samsuri. (2011). *Citizen Character Education*. Yogyakarta: Diandra Pustaka Indonesia.

Sapriya (2005). *Civic Education Learning*. Jakarta: Directorate of Islamic Education, Ministry of Religion.

Sugiyono. (2010). *Educational Research Methods of Quantitative, Qualitative, and R&D* Approaches. Bandung. Alfabeta.

Tirtarahardja, U., & Sulo, L. (2005). *Introduction to Education*. Jakarta: Rineka Cipta.

Trianto. (2009). *Constructivist-Oriented Innovative Learning Models*. Jakarta: Prestasi Pustaka Publisher.

Uno, H. B. (2006). *Orientasi Baru Dalam Psikologi Pembelajaran*. Jakarta: Bumi Aksara.

Veerman, K. (2003). *Intelligent Support for Discovery Learning*. Twente: Twente University Press.

Zubaedi, (2011). *Conceptual Character Educational Design and Its Application in Educational Institutions*. Jakarta: Kencana.