



## 21<sup>st</sup> Century Skill-based Citizenship Competencies in Vocational Education

### *Kompetensi Kewarganegaraan Berbasis Keterampilan Abad ke-21 pada Pendidikan Vokasi*

Eneng Martini

Program Studi PPKn Sekolah Tinggi Keguruan dan Ilmu Pendidikan Pasundan

enengmartini13@gmail.com

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#### ABSTRACT

The 21<sup>st</sup> century's skills-based education is called the knowledge era, and every academic graduate must be prepared to compete with the outside world. So, at this time, ready-to-use citizenship competence is needed to be a citizen who is not left behind with the progress of the times. This study used a qualitative approach, and the object of this study was a vocational high school (SMK), with data collection consisting of interviews, observations, and literature studies with locations in Bandung. A total of 15 informants were involved, divided into school principals, teachers, and students. The results in the field show that the PPKn learning material in vocational high schools is too broad and there is overlapping material, so civic competence must be increased according to the needs of the times. 21<sup>st</sup> century, digital literacy, technology, and character.

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#### ABSTRAK

Pendidikan berbasis keterampilan abad ke-21 disebut era pengetahuan. Setiap lulusan akademik harus siap untuk berkompeten dengan dunia luar, sehingga dibutuhkan kompetensi kewarganegaraan yang siap pakai agar tidak menjadi warga negara yang tertinggal dengan kemajuan zaman. Penelitian ini menggunakan pendekatan kualitatif dengan objek penelitian sekolah menengah kejuruan (SMK). Teknik pengumpulan data yang dilakukan adalah wawancara, observasi, dan studi literatur yang berlokasi di Bandung. Sebanyak 15 informan dilibatkan dalam penelitian ini yang terbagi atas kepala sekolah, guru, dan siswa. Hasil Penelitian menunjukkan materi pelajaran PPKn di SMK terlalu luas dan tumpang tindih, sehingga kompetensi kewarganegaraan harus ditingkatkan sesuai dengan kebutuhan zaman. Untuk mengembangkan kompetensi kewarganegaraan yang lebih baik pada tingkat pendidikan kejuruan diperlukan pengembangan pembelajaran berbasis keterampilan abad ke-21, literasi digital, teknologi, dan karakter

## Introduction

Vocational high schools are appealing options for students to consider due to their practical approach, which prepares graduates for the workforce and even enables them to start their businesses. Technical and vocational education encompasses various forms of learning, including the enrichment of general knowledge, the study of technology and related sciences, and the acquisition of practical skills, expertise, attitudes, and understanding relevant to different sectors of the economy and society (according to Peraturan Presiden tahun 2007). Vocational education, tailored to meet societal needs, particularly in the realm of work and industry, takes on diverse forms. In West Java, the number of schools has increased from 2016 to 2019, with a total of 2,909 schools consisting of 285 public schools and 2,624 private schools.

However, despite the advantages of vocational education, there are challenges to be addressed. Data from the Central Statistics Agency (BPS) in 2017 shows that unemployment rates were highest among graduates from vocational high schools (SMK) at 9.27%, followed by senior high schools (SMA) at 7.03%, diploma programs at 6.35%, and universities at 4.98% (Sugianto, 2018). One of the contributing factors to unemployment among vocational school graduates is the deficiency in specialized and soft skills (Yahya, 2018).

The core subjects and interdisciplinary 21<sup>st</sup>-century themes are (i) learning and innovation skills; (ii) information, media, and technology skills; and (iii) life and career skills” (Trilling & Fadel, 2009). These challenges inevitably have to be faced, and with time, people will get used to the situation. This is proven by the current conditions, and it happens not only in urban communities but also in rural areas so life must continue to be able to keep up with the conditions of the world outside. This is also related to the world of education, which must continue to develop. One of them is through learning Pancasila and citizenship education. The challenge in this 21<sup>st</sup>-century era is digital skills (Triyono, 2017). Constraints and limitations faced by civics learning are (1) instrumental and (2) environment (Budimansyah, 2009). The constraints based on the opinion above must automatically have a solution for a teacher, especially the teacher of Pancasila and citizenship education so that learning objectives can be achieved, and good citizens can be formed.

High school and college graduates often lack competence in areas such as oral and written communication, critical thinking, problem-solving, work ethics, professionalism, teamwork, collaboration, technological proficiency, and project management (Trilling & Fadel, 2009). This highlights the need for a shift from theory-focused instruction towards a more functional and practical approach that aligns with the dynamics of society and globalization (Numan, 2001). Globalization necessitates the development of civic competence, encompassing civic knowledge, skills, and disposition, which are multidimensional (Komalasari, 2009).

To overcome these challenges, there have been studies and demands for the integration of 21<sup>st</sup>-century skills into education, driven by the rapid development of information and communication technology in daily life (Izzo et al., 2010). Media literacy education also plays a crucial role in promoting civic engagement and empowering students to navigate contemporary mediated expressions beyond print media (Kubey, 2004). Fostering civic involvement and developing civic knowledge, attitudes, and behaviors are pivotal for creating an informed citizenry, as demonstrated by urban youth surveys on the relationship between civic competencies and future voting possibilities (Cohen & Chaffee, 2013). Moreover, video games have emerged as a potential platform for cultivating 21<sup>st</sup>-century skills, further exploring the intersection between gaming and skill acquisition (Hewett & Pletcher, 2018).

To develop a creative Indonesia in 2045, three key concepts are emphasized: 21<sup>st</sup>-century skills, a scientific approach, and authentic assessment (Murti, 2013). However, it is essential to bridge the gap between theoretical knowledge and citizens' competence, which serves as the driving force for national progress. The teaching of 21<sup>st</sup>-century skills encompasses critical issues related to thinking, working, tools, and life skills (Harli, 2013).

This study aims to contribute to the understanding of citizenship competencies within the context of 21st-century skills-based learning. Research questions include the current state of citizenship education and efforts to enhance 21st-century skills-based citizenship competencies. Through enriching insights and perspectives on 21st-century learning conditions, this paper aims to contribute to the development of effective learning models that strengthen citizenship competency. It is necessary to address any obstacles faced during the implementation of these models, and further research is required to support and compare findings. Additionally, the connection between vocational school graduates and unemployment rates in Indonesia, as reported by *detik.com*, raises questions about the correlation between the skills acquired in Pancasila and civics education and their contribution to civic competence in the modern era (Chandra, 2017). The anticipated trends for 2025, including increased internet connectivity and smartphone usage, further emphasize the need to prepare individuals for the digital age (Triyono, 2017).

## Method

This research adopts a qualitative approach with a case study method, considering that 21st-century skill-based learning is of utmost importance in enhancing citizenship competence and can serve as a model for other schools in Indonesia. To provide a general overview of vocational schools across different provinces in Indonesia, the table below presents relevant information.

The focus of this study is on West Java, specifically SMKN 5 Bandung, SMKN Bandung, and SMK Telkom Bandung. These schools are selected due to their distinct characteristics and advantages, as well as the varied environmental conditions resulting from their geographical locations. SMKN 5 Bandung offers majors in concrete stone construction techniques, building drawing techniques, survey and mapping techniques, analytical chemistry, and computer and network engineering. SMKN 3 Bandung provides a range of courses, including accounting, business travel, office administration, marketing, multimedia, and computer network engineering.

The purposive sampling model is employed to determine the sample, as it allows for an in-depth analysis of citizen involvement, particularly among students and teachers. Extracting information from experts familiar with specific cases proves effective in purposive sampling (Tongco, 2007). The criteria for selecting informants are as follows: a) willingness to participate, b) students and teachers studying and teaching in vocational high schools, and c) experience with PPKn learning in SMK. The total number of informants is 18, comprising nine students, three PPKn teachers, three school principals, and three peer teachers. Data collection involves interviews, observations, and studying relevant documents. The study's questions are formulated after conducting a literature review of previous research and making preliminary observations at the research site. The writer personally visits the informants, ensuring their willingness to be interviewed and guaranteeing the confidentiality of their responses. This approach allows for a deeper exploration of the raised questions. The collected data is then analyzed using coding techniques (Corbin & Strauss, 1990), involving the process of coding, re-reading, and regrouping findings to establish desired research categories.

## Result and Discussion

Citizenship education in vocational schools is crucial for developing 21st-century skills. Education plays a significant role in creating an environment that nurtures students' religious spirituality, self-control, personality, intelligence, noble character, and the skills required by society and the nation. However, the current educational landscape presents various challenges for both teachers and students. It is important to equip students with critical thinking, problem-solving abilities, information literacy, and global awareness as essential skills for human progress. To address these challenges, curriculum, teacher training, and assessment methods need significant changes in line with the demands of the 21st century and the rapid advancement of technology (Willingham, 2010).

As we enter the 4.0 industrial revolution, digital literacy, technological literacy, and human literacy are predicted to be essential in balancing life and education (Aoun, 2017). It is crucial to maintain a balance between technological advancements and human values, as individuals have rights and obligations within the nation and state. Building good character and integrity is vital to prevent moral crises such as corruption (Purwanto, 2020). The content of citizenship education in vocational schools needs to be tailored to the student's readiness for the world of work and industry to ensure their contribution to a prosperous nation. Pancasila values are emphasized in the present conditions to prioritize changes in behavior and social norms (Abdul Rozak, 2016).

Vocational schools have specific characteristics, such as individual performance orientation, curriculum focus, and sensitivity to the development of the world of work (Bukit, 2014). However, the learning responses in vocational schools should also incorporate 21<sup>st</sup>-century learning approaches (Yahya, 2018). Learning activities in vocational schools often include practical training, such as apprenticeships, to apply theoretical learning outcomes in real-world settings (Achatz et al., 2020).

Citizenship education requires the development of effective learning methods that foster critical, collaborative, creative, and communicative skills. Scientific approaches, such as discovery learning, problem-based learning, project-based learning, and teaching factories, can serve as effective teaching models. The focus should be on enabling students to enhance their information retrieval skills, critical thinking abilities, and comprehensive analysis to navigate the information age efficiently (Triatna, 2010). Developing a blended learning approach that combines classroom-based and e-learning methods can provide students with active and innovative learning opportunities (Daryanto & Syaiful, 2016). The introduction of the "e-marketplace learning model" supported by web- and android-based learning media, such as the PeKa learning application, can facilitate active learning both in face-to-face and remote settings, encouraging students' creativity and problem-solving skills (Triatna, 2010).

Thus, there is a need for development in the 21<sup>st</sup>-century skill-based learning model so that students' critical, collaborative, creative, and communication skills can be realized. Student success depends on 21<sup>st</sup>-century skills (Willingham, 2010). Important components that need to be learned in the development of learners going forward in the 21<sup>st</sup> century are basic foundation components, basic ability components, and basic skills (Triatna, 2010).

In conclusion, advancing citizenship competence through 21<sup>st</sup>-century skill-based learning in vocational schools requires adapting to the demands of the modern era. By incorporating effective teaching methods, fostering critical thinking, and leveraging technology, we can equip students with the necessary skills to thrive in the 21<sup>st</sup>-century world.

**Table I Syntax Model for E-Marketplace**

Step	Information
1	<p>Apperception:</p> <ul style="list-style-type: none"> <li>*Read or display to students the learning objectives and assignments they will face</li> <li>*Students enter the PeKa application with their respective accounts previously given by the teacher</li> </ul>
2	<p>Group formation:</p> <ul style="list-style-type: none"> <li>- In preparation, each group must determine which one of its members will stay and become the "stand keeper". Other members go outside the "market" to gather information.</li> <li>- The stand keeper advertises his business by shouting out the title of the group's material, and beforehand to indicate that the stand is ready to open the ring their yells first.</li> <li>- The stand keeper explains the results of his work to visitors but is only allowed to answer questions from visitors.</li> <li>- Members going to the market will have to visit all the other sub-divisions of the topic, and they will have to organize themselves to complete the work within the time limit, so they may decide to split the work and work individually.</li> <li>- They judge each other which stand is the best from the results of their work</li> <li>- They should all take notes so they can teach the group effectively</li> </ul>

3	Inquiry: students seek answers from various sources and upload them to the PeKa application
4	Interaction between groups: groups collaborate here, ensuring that everyone in the group understands the material and contributes to the results of the uploaded assignments.
5	Back to home base: - Members who went to the market to research information now took turns teaching what they already knew. At this stage, students who do not understand are allowed to ask other groups quickly - take notes, see, and hear to help absorb information.
6	Presentation: One of the group representatives presented the results of their work
7	Reflection: The teacher discusses and with attention to each question that is generally considered difficult by the group. For each of these difficult questions, the teacher asks for volunteers to try to answer them. Then as a last resort the teacher teaches, in this way the gap is filled, and the hole is plugged.
8	Authentic Assessment: The teacher gives individual tests through the application and grades them

In the current learning process of vocational schools, technology-based learning media, such as Android devices and laptops, have become increasingly prevalent. One widely used online learning application is Google Classroom, which enables easy access to teacher-delivered materials, assignments, and daily tests. However, there are challenges related to signal connectivity and the need for teachers to continuously enhance their technological knowledge and skills through training programs. To further enhance student engagement and motivation in using online learning platforms, there is a need for more captivating and interactive features.

To address these concerns, researchers have developed a web-based Android application called PeKa, designed for both teachers and students. This application offers various features that facilitate teaching and learning activities online. Teachers can plan and implement lessons while having direct visibility of student attendance, eliminating the need for multiple applications. Moreover, PeKa provides additional features such as access to learning materials, videos, quizzes, grades, and a chat function that enables direct discussions between students and teachers, particularly when clarifying complex concepts. By developing online learning applications like PeKa, we can meet the evolving needs of education in the era of the 4.0 revolution, ultimately fostering better citizenship competencies among students.

Below is the syntax of PeKa application learning media: each teacher and student have their account, subject code, and identity.

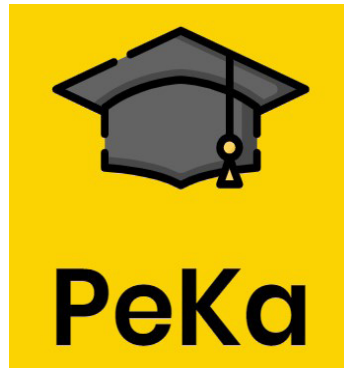
### Teacher

1. Detect the presence of students who take part in subject-teacher learning. Upload lesson plans for one sheet consisting of learning objectives, steps for learning activities, and evaluation. 2. Uploading subject matter, namely subject matter taught in the form of text, PPT, video, etc. 3. Downloading incoming assignments from students, 4. Making quizzes, namely creating, and uploading quiz questions for students who take the subject and creating keywords or answer keys specifically for teachers, 5. There are rules for the timeliness of collecting assignments or student quizzes. 6. Uploading grades, namely uploading the evaluation results of the student's quiz or test, 7. Graphs regarding student assessment results, 8. Provide interaction (discussion) of student questions when there are questions about material that is not understood (chatting column).

### Student

1. Download lesson plans from the teacher, 2. Filling in attendance, 3. Downloading subject matter, namely the subject matter the student is participating in, 4. Uploading student assignments, both text, and PowerPoint, film, animation, etc. 5. Taking quizzes, namely working on quiz questions that are made by subject teachers, 6. Teacher interaction with students and students with other students (through the chat column), 7. Viewing grades, namely viewing the results of the quiz evaluation and graphs of the overall student assessment results.





**Figure 1** PeKa application image:

In the 21<sup>st</sup> century, addressing illiteracy is of utmost importance as we cannot afford the powerlessness it brings. We must prioritize research, teaching, and the practice of media literacy as lifelong endeavors both on a personal and national level in our interconnected world of mediation. Media literacy empowers individuals to become critical thinkers and creative producers of a wide range of messages using various forms of media such as images, language, and sound. Developing media literacy skills is essential for effectively navigating the media and technology-driven landscape of the 21<sup>st</sup> century (Galician, 2004).

To thrive in the modern world, students must possess both soft and hard skills to prepare them for the rapidly advancing and highly competitive job market. For instance, research on massively multiplayer online games (MMOGs) emphasizes the social nature of these games, where players from around the world interact through communication tools such as text-based chat, email, and voice software. The ability to effectively communicate and collaborate in such digital environments is crucial for pursuing shared goals, acquiring knowledge, and fostering cognitive development (Schrader & Krach, 2011). While students today are adept at using social media platforms like Facebook, Instagram, Twitter, and WhatsApp, it is important to also focus on developing their communication skills in real-life situations and problem-solving related to their education (Rahman, 2023).

As students are increasingly surrounded by digital media, they need to be equipped with the ability to interpret and effectively utilize various media forms for learning purposes. This includes creating engaging and impactful communication products like videos, audio podcasts, and websites (Trilling & Fadel, 2009). The rise of game industry technology in the 21<sup>st</sup> century has also provided opportunities to explore game phenomena and the development of 21<sup>st</sup>-century skills through video games (Hewett & Pletcher, 2018).

While traditional learning resources like printed books and ebooks play a vital role in education systems worldwide, it is essential to align these resources with the prescribed government curriculum to ensure their relevance. The internet offers a wealth of information, but the challenge lies in verifying the accuracy and credibility of online sources. Students need to develop “information-finding skills” and learn to filter information effectively to identify reliable sources for civic learning (HOAX). Digital resources, virtual classrooms, and platforms like YouTube can also serve as engaging and easily accessible learning materials (Kustandi & Situmorang, 2012). However, teachers should guide students in critically evaluating online sources and encourage a balanced use of both print and digital resources (Seguin, 1989; Altbach et al., 1991).

When it comes to assessment, it is crucial to measure not only cognitive abilities but also students’ active participation and attitudes throughout the learning process. Different forms of assessment, such as multiple-choice and essay-based tests, can be conducted using IT-based platforms like laptops or Android devices. Assessments should also incorporate higher-order thinking skills (HOTS) and provide opportunities for students to apply their knowledge and skills to real-world scenarios (Silva, n.d.). Teachers play a crucial role in facilitating evaluations and guiding students in critical thinking and problem-solving in authentic contexts (Lau, 2019).

To ensure effective teaching and learning, simplicity, and efficiency in the Learning Implementation Plan or RPP are vital. The RPP should contain the essential components of learning objectives, steps, assessment, and other complementary elements aligned with the curriculum guidelines provided by the Ministry of Education and Culture. By adhering to these guidelines, teachers can efficiently implement student-centered and goal-oriented teaching and learning activities.

In conclusion, addressing illiteracy and developing media literacy skills are essential in the 21<sup>st</sup> century. Students must be equipped with effective communication skills, critical thinking abilities, and the capacity to navigate and evaluate digital media. Utilizing a combination of traditional and digital learning resources, teachers should guide students in accessing reliable information and encourage critical evaluation. Assessments should go beyond cognitive abilities and include opportunities for applying knowledge and skills in real-world contexts. By prioritizing these aspects, educators can ensure that students are well-prepared for the challenges and opportunities of the modern world.

### **Efforts To Improve 21<sup>st</sup>-Century Skills-Based Citizenship Competencies**

Citizenship competence encompasses three important components: citizenship knowledge, citizenship skills, and citizenship dispositions (Bronson, 1998). Knowledge is a fundamental asset for individuals and society as it forms the basis of political systems, governance, and social structures that shape national life (Komalasari, 2009). This research focuses on 21st-century skills-based learning, which emphasizes the development of student knowledge through contextual teaching. Contextual learning aims to establish meaningful connections between abstract concepts and real-world applications, utilizing both print and electronic media (Komalasari, 2009).

While classroom learning plays a significant role, extracurricular activities can also contribute to students' understanding of citizenship. Active citizenship, with its multifaceted nature, finds its connection to various knowledge sources, including education, as a platform for shaping citizens (Bengtsson, 2015). Citizenship education involves teaching and nurturing citizenship competence, anchored in active citizenship within a national and/or European context. This includes exploring political reasoning and discursive practices that underpin the teaching of citizenship competencies (Bengtsson, 2015).

Examining the formation of citizenship competencies in youth requires consideration of the stratification literature, which explores the role of ability grouping in (re)producing inequality in human capital. Understanding the relationship between ability grouping, class separation, and the inequality of citizenship competencies can enhance knowledge in this field (Janmaat, 2011).

An ideal 21<sup>st</sup>-century citizen possesses eight characteristics: problem-solving abilities, social cooperation skills, acceptance and respect for cultural differences, critical and systematic thinking capacity, conflict resolution without violence, willingness to change consumptive habits for environmental protection, sensitivity to and protection of human rights, and active participation in politics at local, national, and international levels (Cogan & Derricot, 1998).

Character and citizenship extension can be facilitated through social media, highlighting the importance of educators enhancing their skills in social studies and character building. This will foster civic virtues and cultivate responsible student citizens both inside and outside the classroom (Waters et al., 2020). Moral education is an ongoing process that begins in early childhood and continues throughout an individual's life (Kristjánsson, 2010).

Citizenship education in the 21<sup>st</sup> century encompasses a conceptual framework with three dimensions. The first dimension is Information, focusing on skills to access, evaluate, and organize information in a digital environment. The second dimension is Communication, encompassing effective social interaction, collaboration, and virtual communication. The third dimension is Ethical and Social Interaction, emphasizing social responsibility and how individual actions impact society in the context of a digital society.

## Conclusion

The results of the study found several findings, including the current learning process covering the content of citizenship education learning materials in vocational high schools. The same thing was found: the resource person considered the material too broad, the examples of cases in the teacher's book were too high, and there was material overlap. Learning methods in citizenship education have been highly developed, although currently there is an imposition of labels on 21<sup>st</sup>-century skills centered on the development of the 4C (critical, collaborative, creative, and communication). Maybe even a scientific approach has described it, but sometimes there is a change in the research term that makes the method stagnant. As well as efforts to improve citizenship skills based on 21<sup>st</sup>-century skills, blended learning methods are needed, namely class-based learning and e-learning based on electronic media. The learning model chosen by researchers for developing the current learning model is the e-marketplace learning model, which is a development of the marketplace learning model. With this e-marketplace model, students can learn actively both face-to-face and online, dealing with teachers or distance learning, and they are required to be more creative and innovative both in thinking about solving problems and creating new material or findings.

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