

**Implementation Of Information And Communication Technology In Improving Intellectual Competence Of Reserved Components Through Integrated Training And Monitoring System Of Reserve Components (SPMT Komcad) In Inactive Periods.**  
(Qualitative Analytical Descriptive Study on MAN 1 and MAN 2 Tasikmalaya Regency)

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**Abstract**

*Reserve Component as a national resource that is prepared to be deployed through mobilization to enlarge and strengthen the strength and capability of the main components, TNI and POLRI. The existence of an active period and an inactive period of Komcad on the other hand becomes a question whether Komcad can maintain its intellectual competence during an inactive period. This study aims to determine the use of information and communication technology in increasing the intellectual competence of reserve components through the Reserved Components Integrated Training and Monitoring System (SPMT Komcad) during inactivity. The method used in this research is a quantitative approach. The data collection technique in this research is using literature study, the authors develop a system with the waterfall model, namely sequentially starting from the analysis, design, coding, testing and support stages. The results of this study are the increase in intellectual competence of reserve components can be done through an integrated training and monitoring system for Reserve Components (SPMT Komcad). SPMT Komcad can be a solution to the concerns of spare components in maintaining their competence in inactive periods.*

**Keywords:** *Information Technology, Competence, Reserve Component*

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**INTRODUCTION**

Based on Tjahyanti and Chairunnisa (2020), competence is the ability and characteristics of a person in doing a job or task based on the knowledge, skills and behavior that individuals have with effectiveness. Intellectual competence. Spencer and Spencer (1998: 13), define Competence as Competence is a fundamental characteristic of an individual that is causally related to effective and/or superior performance that refers to criteria in a job or situation.

Intellectual ability according to Robbins (2001:57) is the ability needed to carry out mental activities, think, reason and solve problems. IQ tests, for example, are designed to ascertain a person's general intellectual ability. The measurement indicators in the study are the opinion of Robbins (2008: 146) that the indicators used as measurements of intellectual competence are numerical intelligence, verbal comprehension, perceptual speed, deductive reasoning, inductive reasoning, spatial visualization, and memory.

In another reference, indicators to measure intellectual intelligence according to Wiramihardja (2003:73), are numerical ability, figure ability, and verbal ability.

1. Figure ability is an understanding and reasoning in the field of form
2. Verbal ability is understanding and reasoning in the field of language
3. Understanding and reasoning in the field of numerical or related to ordinary numbers is called numerical ability.

Another source states that Moustafa and Miller (2003: 5) stated that the measurement of intellectual intelligence cannot be measured with just one single measurement. The researchers

found that tests to measure cognitive abilities are used for three important measurements, namely verbal ability, math ability, and spatial ability.

Along with the advancement of the times, Digitalization not only brings great positive impacts, but also brings negative excesses such as transnational crimes in the cyber realm, the development of hoaxes, fake news, and hate speech that pose many national threats. The view of the need to establish a reserve component in Indonesia has a logical reason given the magnitude of AGHT (Threats, disturbances, Obstacles and Challenges) that exist in the present. The choice to add, enlarge and strengthen the posture and capacity of the TNI is actually a very good solution.

The existence of a reserve component in the context of national defense is something that is gradually required. Changes in security threats that are not only militaristic in dimension make the approach related to the existence of the reserve component need to be taken into account. the formation of Komcad was carried out after President Joko Widodo issued Government Regulation (PP) Number 3 of 2021 concerning Implementation Regulations of Law Number 23 of 2019 concerning Management of National Resources (PSDN). Based on the law, Komcad is intended as a national resource that is prepared to be deployed through mobilization to enlarge and strengthen the strength and capability of the main component.

In line with the times, learning methods have so far been very developed, the rise of virtual education is one proof of this. Through the Integrated Learning and Monitoring System for Reserve Components (SPMT Komcad), the increase in intellectual competence possessed by reserve components should be maintained and even improved during the inactive period. SPMT Komcad is a website-based application that functions to provide space for developing intellectual competence through learning and monitoring of reserve components during inactivity.

The success of the formation of the Combatant Command in responding to various kinds of AGHT is expected to be well realized, but on the other hand, the brevity of the learning carried out and the inactive period of the Combatant Command will become a new problem. The existence of an active and inactive period of the comrade on the other hand is also a question of whether the comrade can maintain his leadership competence during the inactive period. The active period in question refers to refresher learning and mobilization activities (Military Operations of War / Military Operations Other than War), while the inactive period is the period when they return to their original profession.

The results of this study can be used as a consideration for the Government and parties who will make decisions related to increasing the competence of the Republic of Indonesia's reserve components in the current digitalization era. This research is expected to help related parties in strategizing and implementing policies to increase the competence of the Reserve Component in its success in responding to various kinds of AGHT in the field of defense.

This study aims to determine the utilization of information and communication technology to improve the intellectual competence of reserve components through the design of an integrated learning and monitoring system for reserve components (SPMT Komcad) during inactivity

## **RESEARCH METHODS**

The method used in this research is a quantitative approach. The data collection technique in this study is to use literature studies, literature studies carried out, namely by studying and collecting theories that are relevant to the topics discussed in order to obtain written data and information that relate to the problem put forward. The research design is the

steps that will be taken when designing the system. The research flowchart can be seen in Figure 1.

In this study, the authors conducted system development with a waterfall model, which is a model that provides a sequential or sequential software lifeflow approach starting from analysis, design, coding, testing and support stages (Rosa and Shalahuddin, 2011). In the programming stage, the implementation of the design results into lines of programming code that can be understood by the machine (computer). The software used to translate into machine language in designing this application is PHP software, XAMPP, and MySQL database.

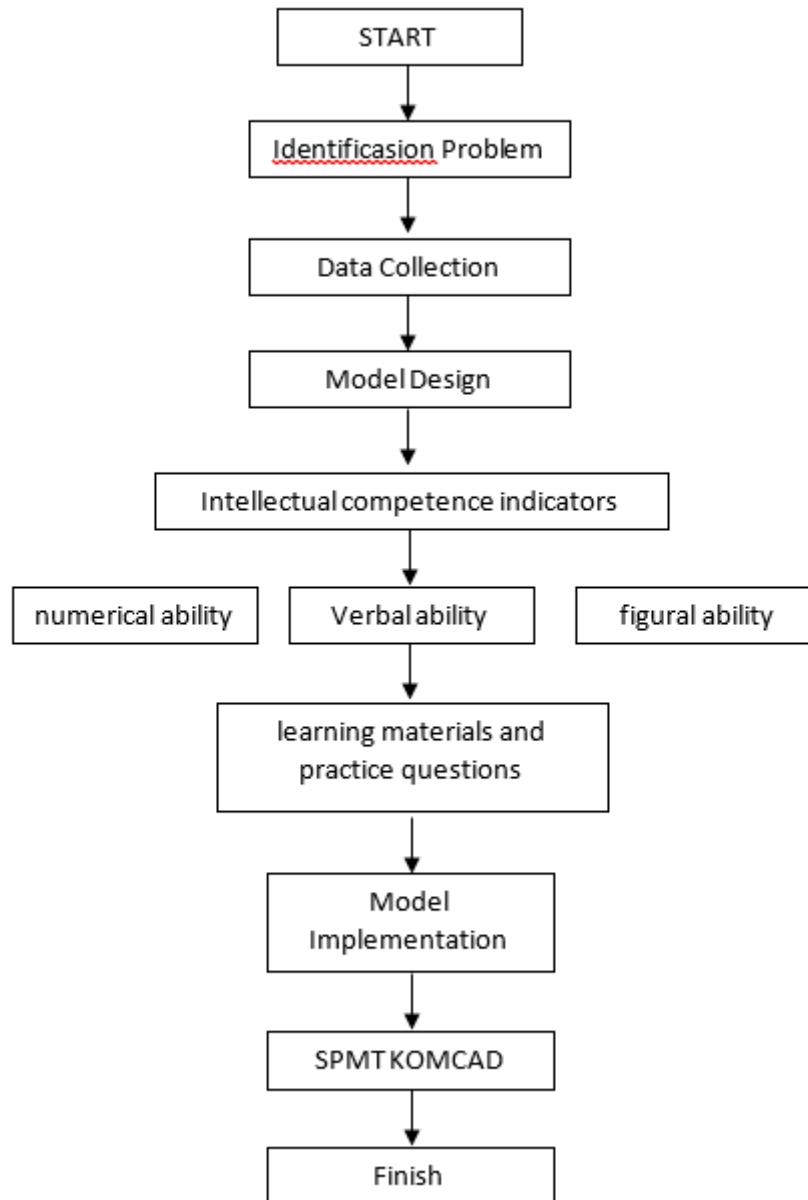


Figure 1 : Research Flowcart

Data Flow Diagram (DFD) is a diagram that uses notations to describe an existing system or a new system that will be developed logically without considering the physical environment where the data flows or the physical environment where the data will be stored. Data Flow Diagram (DFD) is shown in the figure below.

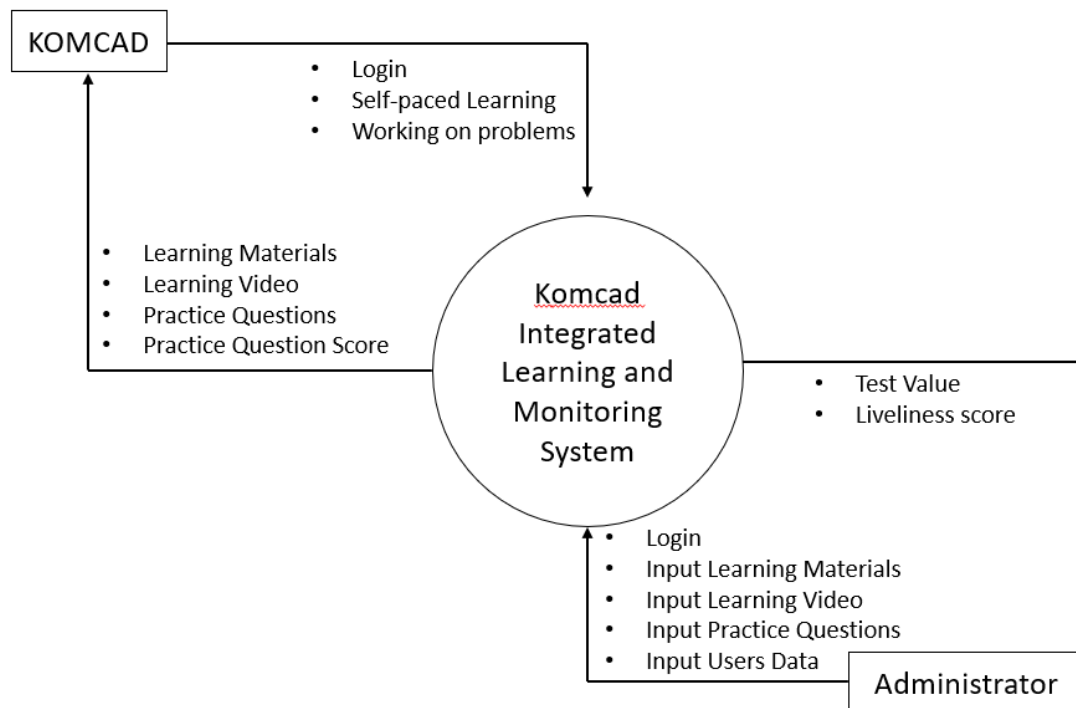


Figure 2. Data Flow Diagram

## RESULT AND DISCUSSION

### Combat Reserve Component Integrated Learning and Monitoring System (Combat SPMT)

In accordance with Wiramihardja (2003: 73), in its application to SPMT Komcad, the development of Intellectual Competence, consists of 3 aspects namely; numerical ability, figural ability, and verbal ability. The determination of this indicator is supported by the opinions of Moustafa and Miller and Robbins. These three aspects are then used as the main focus and improvement indicators in building the concept of developing Komcad's intellectual competence. These three main competencies are then developed into learning materials in the form of narratives and videos. In addition to learning materials, SPMT Komcad also provides questions related to learning materials, which of course will help measure the level of understanding of the material that has been learned.

The application of numerical ability aspects in a learning system is done through the use of numbers, doing calculations and changing story description problems into numbers which can then be calculated with mathematics. Meanwhile, the application of verbal ability is done by listening, analyzing the content of a statement, expressing ideas, opinions, and thoughts, and drawing the right conclusions. The figural ability aspect is done in the form of analyzing pictures, symbols, and diagrams.

Numerical, verbal and figural skills in improving intellectual competence are developed through several key points, shown in the following table;

Table 1. Key points of numerical, verbal and figural abilities

Aspects of Intellectual Competence	Learning points
Numerical	Komcad is able to perform mathematical reasoning (logic)
	classify and
	categorize information
	Thinking with concepts
	Accuracy
	use of basic arithmetic functions
	speed of use of basic arithmetic functions
	Find
Verbal	relationship of existing information
	ability to link various information
	Komcad is able to link various information
	make a hypothesis
	explain a thought
	Oral and written skills
Figural	examine the content of the statement
	draw a conclusion
	komcad's mental agility in analyzing images
	mental agility to analyze Symbols
	mental agility to analyze the Diagram
	Ability to determine comparison
Ability to see differences	
Ability to see patterns of relationships	

From these three basic aspects of competence, learning materials are made in the form of reading narratives and educational videos. Learning materials can easily be accessed using smartphones and computers and can be used in the form of android applications. An example of the SPMT Komcad application display on the screen can be seen as shown below;

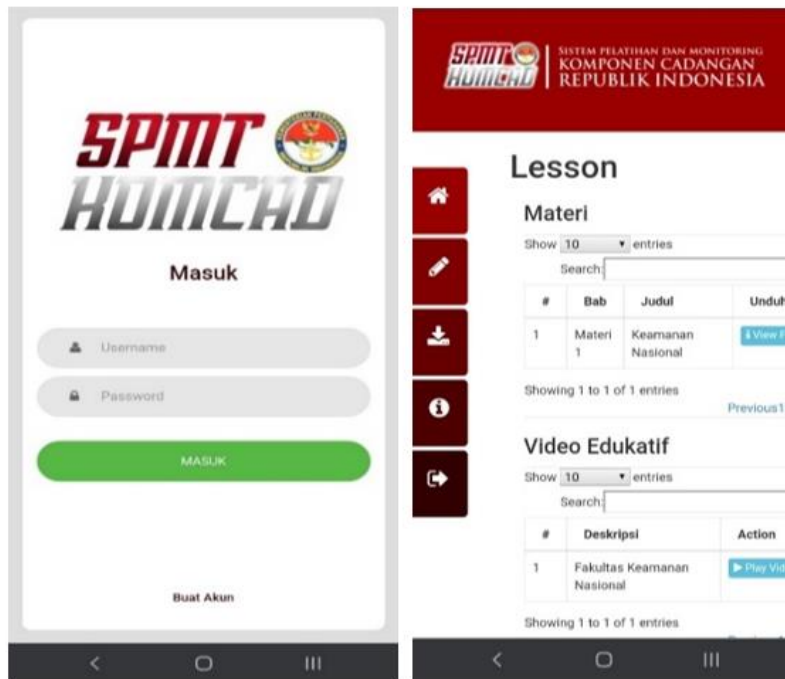


Figure 3. Example of login and learning page on SPMT Komcad application

To measure the understanding of the material that has been obtained through this SPMT Komcad application both reading and video, there is also a special exercise menu for komcad members who use it. The form is in the form of questions that can be answered directly through the application, the image is displayed as follows;

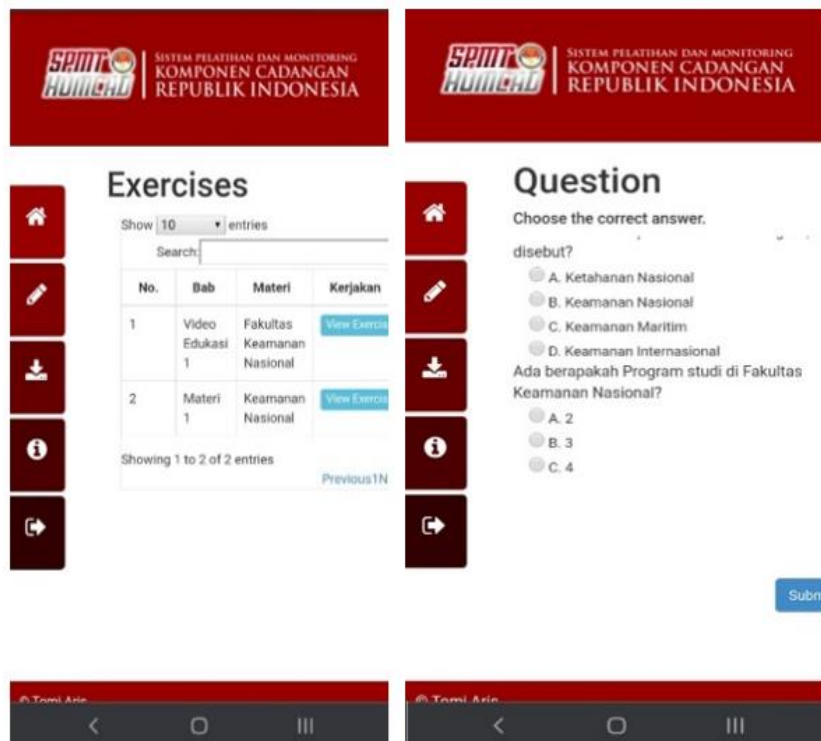


Figure 4. Examples of questions in the SPMT Komcad application

This Reserve Component integrated learning and monitoring system can also be accessed using a browser. The following is a view of the SPMT Komcad application in a browser;

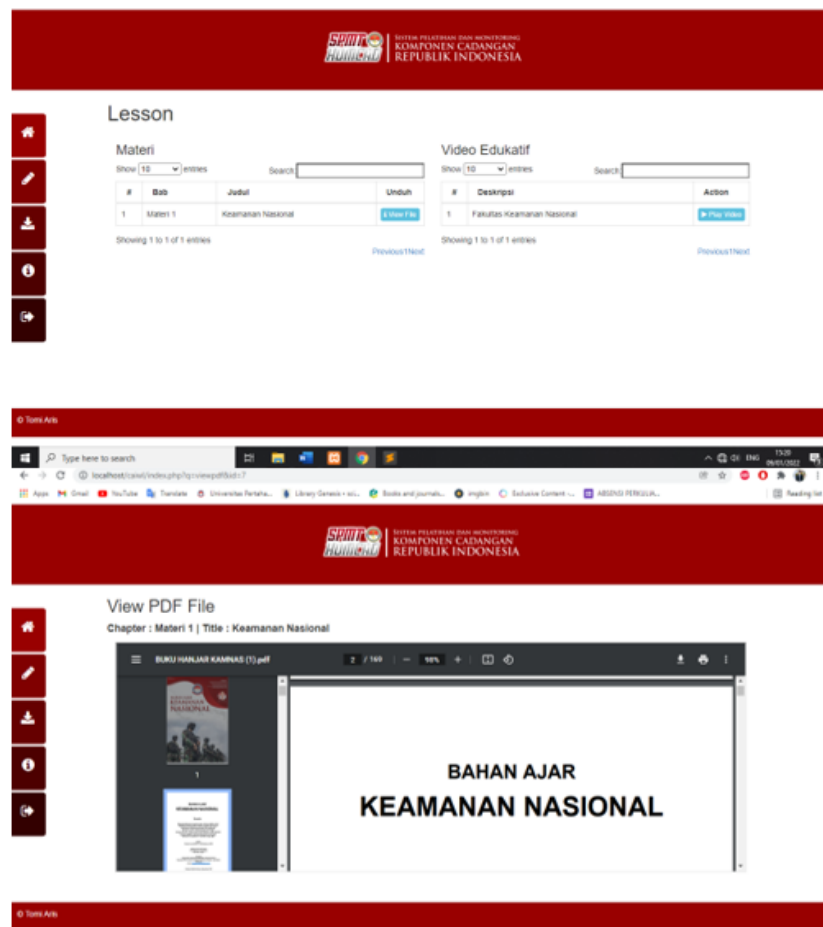


Figure 5. Example of SPMT Komcad application display on the browser

In an effort to enable learning materials to be accessed offline, the SPMT Komcad application also features a download feature. After completing the process of answering questions, the value will be automatically recorded into the system. This incoming value can also be used as a reference to monitor the activeness of the reserve component in increasing its competence.

### **Improving the Intellectual Competence of the Reserve Component in the Inactive Period through SPMT Komcad**

The existence of active and inactive periods in the Reserve Component raises problems for the development of the competence of the Reserve Component. Steps are needed to overcome this, one of which can be done by building an Integrated Learning and Monitoring System for the Reserve Component of the Combat Team (SPMT Combat Team) made with the aim of being able to help the reserve component be able to maintain and improve its competence during the inactive period.

Increased competence for komcad is very necessary, considering the background and busyness of komcad is very diverse. Especially intellectual competence, because people with good intellectual intelligence, for them there will be no difficult information, everything can be stored, processed and re-informed when needed. In general, intellectual intelligence can determine how a person works and also how he adjusts to his environment.

A reserve component that has good Intellectual Competence can be seen from several examples including; The tendency of a person in setting goals and being consistent with what he has chosen, the higher the level of intelligence of a person, he is always consistent with the goals he has chosen and does not easily switch goals. Not only consistent in goals, but backup components that have good intellectual competence will be able to complete the goals and tasks that have been set.

The intelligent backup component has the advantage of self-criticism, which is manifested in the ability to look for mistakes that have been made and try to correct these mistakes. Intelligence gained from his experience in solving problems that are always linked to his academic abilities. Members of the reserve component with good intellectual competence, for him there is no difficult information, everything can be understood, processed and re-informed when needed.

The importance of intellectual competence for a member of the reserve component is closely related to his success in carrying out his duties on active duty. Intellectual competence is needed not only in the environment of military operations and other operations but also in everyday life.

Although intellectual competence is often associated with natural factors that a person has, this competence is very possible to be developed. Developing the intellectual competence of the reserve component can be done in various ways such as learning new things, reading books, playing strategy games such as chess and many more. By learning new things, of course, for a reserve component, it will make it more broad-minded, our insight will increase and we will be better able to explore the hidden talents that a person has. Reading a lot of books will add new knowledge that we may not know, as well as knowing the latest updates on current developments. A reserve component who is always actively reading and following the latest news will not always know new things.

The covid-19 pandemic, which keeps many people at home, should be utilized to improve their competence more. Because if not, it will be very difficult for us to keep up with the rapid development of the times. A member of the reserve component during the pandemic who studies more will be able to maintain and even develop his competence than those who do not study.

Therefore, through SPMT Komcad, it is expected that learning for members of the reserve component will increase. With learning methods through educational videos and facilities and features owned by the SPMT Komcad application, users will be more interested in participating in learning. Not only that, for the government, in this case the Ministry of Defense, monitoring can also be carried out through activeness data and value scores that are automatically recorded in the SPMT Komcad database.

## CONCLUSION

The main conclusion of this research is that through the utilization of information and communication technology, increasing the intellectual competence of reserve components can be done. The integrated learning and monitoring system of the Reserve Component (SPMT Komcad) in the inactive period can be a solution to the concerns of the Reserve Component in maintaining its competence during the inactive period. This learning and monitoring system can also be used as the latest breakthrough in improving the quality of the Reserve Component's intellectual competence in facing the increasingly complex AGHT at this time. The creation of training materials and questions is based on 3 aspects namely; numerical ability, figural ability, and verbal ability.

Furthermore, from the questions displayed as a form of exercise, it can also be used to monitor the development of activeness and the development of intellectual competence of Komcad members.

Recommendations from the author are the need for further analysis in the selection of learning materials, making the right questions and testing the material to be used. So that both the material provided and the questions given will be appropriate and interesting for users. The creation of materials both narrative and educational videos and appropriate questions to assess in this study is still very limited. Therefore, in the future, future research can be developed.

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