

# An Improvement Framework for E-learning Processing method Development at Centralized Organization Education

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**Abstract:** - In the past decade, E-learning has played an increasingly important role in modern education, Distance learning and E-learning are getting more attention, not only from enterprise organizations, but also from Seal and organizations such as the military. Thus, in the troops which is a Seal and centralization organization, the traditional education training should be changed and catch up the modern training method. This paper based on Web Service, that is by World Wide Web Consortium (W3C) Design and designated which is used for promoting and stepping the communication among the platforms. In addition, we using the TAM model with Perceived Usefulness and Ease of use and the user believed that the IT will strengthen his task performance in the degree. Based on the exploratory study in this research, we use interview and survey methods to collect data and analysis the research field explore viewpoint. The purpose of this study is three-fold. First, it heeds the call for theoretically-based empirical research on the TTPi. Second, it, examines the C Troop choice and usage perspectives in combination in an attempt to find their individual and combined effects on E-learning choice and usage. Finally, it attempts to synthesize research in this area by developing a model showing how TTPi influences troops. The results of this study lead us to develop some propositions and develop a Troop Training Process improvement (TTPi) model with some better strategies for such training. We hope this study can enhance troop training achievements and enhancing training efficiency.

**Key-Words:** - E-learning, centralization organization, training efficiency, web-base, education training

## 1 Introduction

In the current information age, E-learning is becoming more and more popular, and one topic of interest is how to use such technologies to improve the Army's training programs. Ololube (2007) points out the distance learning is important to troops, and IDC research has shown it to be cost-effective. In addition, it has been found that the training method with E-learning had a strong effect on the troops. E-learning is a training technique which most people are willing to adopt, and distance learning programs in particular are important as centers for the development of knowledge [1]. Distance learning is important to the troops, and there are a number of plans for further integrating related technologies into army training [2][16].

Recent studies show that TAM can be successfully applied to Internet-related information systems, such as: e-commerce, distance learning and so on. [20] Explored the factors affecting user acceptance sites. They think that a site is also a kind of information systems with TAM using behavior.

Today, organizations are increasingly adopting distance learning methods to train and develop their employees [3], and troop training and education can adopt the same techniques [4]. This study is to describe the status of current E-learning in Seal and centralization organization education training, and to discuss the feasibility and the strategy development of deploying troops training. Our research built on recent efforts in the E-learning field, including distance learning about

modeling and theory, and we also attempt to establish a method to improve traditional troop education training. In this paper we using a exploratory survey and interview methods, and found that the traditional troop training patterns in Seal and centralization organization should be changed. The ideas of Seal and centralization organization using web-based technologies in education as means of interactive learning has often been proposed in computer science and engineering. It has been proved to be more effective in the learning process and is therefore rapidly expanding [5].

E-learning is not only important to enterprise or school but also important to troops. Thus, the type of traditional troops education training should be changed [2][16] and catch the modern up. This study we using the interview and investigation to collect data. According to the questionnaire about experience (behavior), opinion, value, feeling, knowledge and background perspective, we definition of the situation codes and got the propositions. The purpose of this study is three-fold. First, it heeds the call for theoretically-based empirical research on the TTPi. Second, it examines the C Troop choice and usage perspectives in combination with an attempt to find their individual and combined effects on E-learning choice and usage. Finally, it attempts to synthesize research in this area by developing a model to show how TTPi influences troop learning.

## 2 Literature Review

### 2.1 Why using TAM at E-learning for troops?

The TAM Technology Acceptance Model (TAM), based on the theory of reasoned action (TRA), is used to explore rational and emotional factors and their relationship to the use of new technologies [24][25]. In this study the phenomenon is driven by advances in the E-learning with TAM and the model is presented in Figure 1. Until comparatively recently, TAM has been used to explain in individual use of E-learning. In addition, we find that the science and technology accepts the pattern (Technology Acceptance Model, TAM) was proposed by Davis

in 1989 [24][25], and the theory was take by Fishbein and Ajzen [26] rational behavior theory (Theory of Reasoned Action, TRA) as the foundation hoped provides a foundation, uses for to discuss the external factor regarding user's internal faith (beliefs), manner (attitudes) and the intention (intentions) influence. The theory origins "the behavior" is by "the behavior intention" the institute decided directly "the behavior intention" by "the use manner" and "the consciousness useful degree" decided together, Thus, the system can influence the users performance and the training and the system design. Besides, the system will to establish the process the nature indirectly to affect to user's use intention. Thus uses this theory for the E-learning or the training with troops is very important.

In this paper, we use this theory the reason is: Today network science and technology vigorous development, therefore in several study domains, also has had the science and technology which along with it many correspond, no matter the enterprise and the Government department, accepts the approval to E-learning to enhance gradually, therefore the E-learning development, can have what kind of impact and the influence to Troop's training, will be the question which is worth discussing, especially introduces the TAM theory discussion different organization and logarithm position study induction to studies or the training cost and the efficiency has these benefits is also the very important issue. (The TAM model shown in Figure 1)

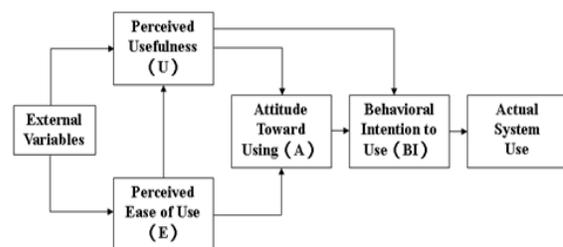


Figure 1. Technology Acceptance Model (Davis et al., 1989)

### 2.2 The role of E-learning for troops

Wisher [6] reported that the goals of the U.S. Army Training and Doctrine Command (TRADOC) include increasing training opportunities for soldiers, improving the quality

of instruction, increasing access to training, and reducing the time soldiers spend away from their units. The army considers distance learning at least part of the solution toward achieving these goals. Distance learning is the delivery of standardized individual, collective, and self-development training to soldiers and units anywhere and anytime through the application of information technologies [6]. Researchers [7] have reported that it is essential for the workforce to gain practical skill competencies that are generally unrelated to using computers;

E-learning implementation faces some specific challenges. In situations when incorrect learning can lead to injury or death, E-learning is a valid technology to avoid the tragedies during training. It is very important for troops to gain practical skill from E-learning, and it must also be acknowledged that soldiers require many the different types of education in order to train their basic capabilities and improve their specialized knowledge and skills.

Table1. The related literature with regard to E-learning and troop training.

Viewpoint		Author
The E-learning is when learners can use digital tools, and is related to distance and online learning..		Brooke (2002)
It is essential for the workforce to gain practical skill competencies that are generally unrelated to using computers. E-learning implementation faces some specific challenges. When incorrect learning can lead to injury or death, E-learning can be used to avoid the tragedies occurring during training.		Ellis and Newton ( 2004)
Learners must be trained to use technology effectively, so that they gain benefits from E-learning.		Juhary (2005).
Distance learning programs in particular are growing in importance as centers for the development of knowledge.		Ololube et al (2007)
Distance learning and E-learning viewpoint	Distance learning and E-learning are receiving considerable attention, not only from enterprise organizations but also from the military.	Wisher et al (2002)
	Distance learning is the delivery of standardized individual, collective, and self-development training to soldiers,	Wisher et al (2002)

### 2.3 Framework for Research

Our research built on recent efforts in the E-learning field, including modeling and theory related to distance learning, and we attempt to establish a method to improve troop training. In the traditional education system, learning is teacher-centered. With E-learning, learners become independent and responsible for their own learning. Therefore, learners must be trained to use this technology effectively, so that they can gain all the potential benefits [8]. E-learning means that each kind of education and training curriculum can be supplied by related network, delivered via the Internet, discs, satellites, personal digital assistants, and wireless devices or telephones, Brooke [9] also note that with E-learning learners can use digital tools to access digital materials for online or offline learning, free from the limitations of time and place, so that the learning contents need to more diverse in order to allow flexible self-guided study. In this work, we define E-learning as distance learning, online learning, synchronous learning, asynchronous learning, and blended learning. Brooke (2002) presented four classifications for E-learning, as follows: 1) Informal: learners can search for the topics they are interested in and make their own schedules. 2) Self-decided progress: the learners schedule their own learning time and place, with much of the learning occurring online. 3) Tutorial guide: at Internet universities, the institution decides the schedule with regard to time, but the learners decide their own rate of progress within that time.. 4) E-learning and tools: Learners can get on-line assistance.

In previous research, Wisher et al. (2002) found that distance and E-learning are increasingly of interest to the U.S. Army, which is attempting to embed the related techniques and technologies into its general training programs. The current paper is based on the work of Wisher et al (2002) to further investigate how military learners use these new learning methods. Moreover, since the earlier work was conducted, researchers have found that distance learning programs have continued to grow in importance as centers for the development of knowledge in the military (Ololube et al., 2007) and elsewhere (Burgess and Russell, 2003).

Troop training and education must be continuous throughout an individual's military career (Betz, 2007). The idea of using web-based technologies in education as means of interactive learning has been proposed for several topics in computer science and engineering. It proves to be more effective in the learning process and is therefore rapidly expanding. With the further research of E-learning is presented, it is important to troops. Thus, the type of traditional troops education training should be changed and catch the modern up.

### 2.4 Applying the TAM to an examination of E-learning and training

Although the TAM has become a widely accepted model for exploring an individual behavior, relatively few scholars use it in an E-learning context. Consequently, it is adopted in this study, along with an examination of issues related to E-learning behavior, user perceptions and attitudes, and E-learning performance evaluation, in order to consider the topic from three dimensions, and the theoretical basis for this research is presented in Figure 2)

E-learning presents learners with text, audio, graphics, video, animation and virtual reality files integrated in accordance with a detailed and comprehensive instructional design and rigorous software engineering specifications, and implemented with mentor/tutor support in conjunction with complementary residential training, to optimally meet their needs. (Ellis and Newton, 2004) reported that E-learning is a system based on a new generation of distance learning technology, which provides opportunity for both synchronous and asynchronous interaction among the stakeholders of the instruction process. Traditional Army training requires officers to gather in training camps and attend the lessons, which oblige them to leave their units. However, this approach is extremely costly, and distance learning techniques offer an attractive alternative. Sharma et al. reported that E-learning is a continuum that is based on the location where learning takes place. On one end there is no distance learning, as in the case of face-to-face classroom teaching, and on the other end, fully online learning, as in the case of distance learning (Puteh and Hussin, 2007). **A**

brief summary of the studies related to E-learning and troops training are shown in Table 1.

Based on the literature review, we focus on E-learning and troop training by using the concepts shown in Figure 2.

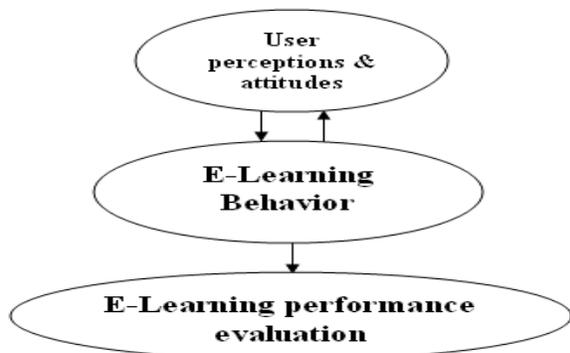


Figure 2: Init research concept

Table 2. A comparison of different kinds of training

The method of educative training	Degree	Administrator	Manager	Employee	New Employee
Impart knowledge	Impartation	⊙	⊙	⊙	⊙
	Discussion	⊙	⊙	⊙	⊙
	Common education		⊙	⊙	⊙
	Study	○	⊙	⊙	⊙
Adjust action attitude	Audiovisual education	⊙	⊙	⊙	⊙
	Promotion understanding	○	⊙	⊙	
	discussion method		○	⊙	⊙
Develop creation & improve solving capability	Role playing		○	⊙	⊙
	Brainstorming	○	⊙	⊙	⊙
	Work field training	○	⊙	⊙	⊙
	Case study	⊙	⊙	⊙	⊙
Even processing	Even processing	⊙	⊙	⊙	
	Solving problem discussion	⊙	⊙	⊙	

Source: Education training book, Japanese Industry Work Investigation Bureau, 1990

Staff in-service training and the backflow education must recognize individual differences, and thus also allow for different kinds of training. The design and development of digital education includes the training of digital education teachers, integration of digital education curricula, and the planning and implementation of these. Various kinds of education training are shown in Table 2. Based on the related research, the main problems with digital education are the increased budgets and greater time required to prepare the curricula. Thus, prior to the establishment of an E-learning system, all members of the organization should work together to achieve the goals of the project. In addition to using self-training and outsourcing

to train seed teachers, digital teaching materials, tools, and design processes should also be developed.

Table 2. The compare of Traditional Learning and E-Learning

	Traditional learning	E-Learning
Learning pattern	<ul style="list-style-type: none"> <li>• A fixed place of study and time</li> <li>• Instructor decided the learning progress</li> </ul>	<ul style="list-style-type: none"> <li>• Any place and time</li> <li>• Internet links diverse learning</li> <li>• Learning progress of individual decisions</li> </ul>
Teaching pattern	<ul style="list-style-type: none"> <li>• Master instructor learning</li> <li>• Repeat instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce duplication of teaching times</li> <li>• Teachers and students interact in different ways</li> </ul>
Teaching materials	<ul style="list-style-type: none"> <li>• Various types of printing and paper content</li> <li>• Physical operation</li> </ul>	<ul style="list-style-type: none"> <li>• Variety of multimedia teaching materials</li> <li>• Access low-cost production and reuse of high</li> </ul>

### 3 Research Method

According to the E-Learning process, platform and tools is very important. The research adopts its E-Learning characteristic to effectively sketch the contours of the learning behavior and web service method features. . Because Web Service is an open platform and open standard, it offers a service of cross-platform where the users can get the needed service depending on their demands. Troops can change the traditional face to face training method and became E-Learning of web service role. Therefore, in this study, we proposed new training method based on web service future and we using interview methods to collect data.

#### 3.1 Web service

The Web service effort is mainly towards producing standards and recommendations that will interlink data and applications, With a little effort, many Web 2.0 applications can and do use Semantic Web technologies to great benefit.

Been while, the traditional learning and E-learning is different. Thus, maybe we can using the web service concepts to enhance to troop training. Web Service is by World Wide Web Consortium (W3C) Design and designated which is used for promoting and stepping the communication among the platforms. Yap[27]refers to the development of Web Service that it can divide into several stages on the concept, design, manufacture, test, and merge of the software component to develop and innovate and then system

combination is finished, the web service future as show in Figure 3.

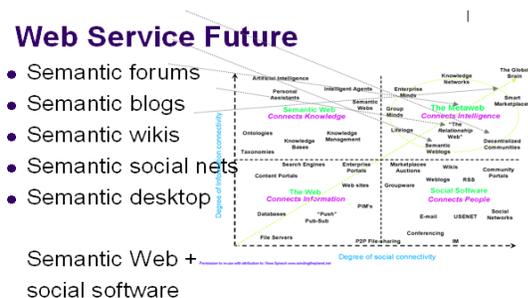


Figure 3. Web Service Future

### 3.2 Data sample collection

In this section, we present the research methodology and then review the related literature to establish the theoretical architecture. According to Davis, Bagozzi, and Warshaw's (1989) work on the TAM, we approach the problem of E-learning by asking the following questions. How well do intentions predict usage? How well do E-learning and TAM explain intentions to use a system? Do attitudes to E-learning influence the effect of beliefs on intentions? As there any alternative theoretical formulations that better account for the observed data? How can we develop a method to improve the efficiency of troop training?. Based on the literature review, this study uses an open questionnaire with NUMBER WHO to gather more information about these issues. We used case study triangulation to test the validity of WHAT, and we built an E-learning using at troops training initial architecture with some propositions. In order to collect data, we conveniently selected one virtual troops as our sample, called C troop. Sixty-eight copies of the questionnaire were collected. The statistic questionnaire of agreement with the developments of E-learning for age ranges is shown in Table 3. Table 3 and Figure 4 show that most of the instructors (85.3%) felt that E-learning is an efficient system, because learners can study themselves at anytime and anywhere. In addition, 79.4% of the instructors responded that learners can generally make progress with E-learning. In addition, we found that have some presentations in significance order of 68 chiefs, including "more interactive", "animation and

multimedia", "graph and table", and "simple to use".

Of the results, we find that induct E-learning method on the troops was very important, By and large that can change and improving the troops training method and management dilemma, so the troops leader must to real fact that point and make a decision to fully changing the Seal and centralization organization training pattern, such as using IT technology information acquisition and communication and implementation processes.

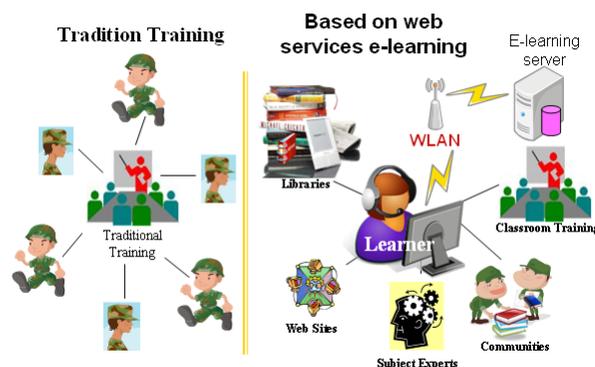


Figure3. The traditional training has compared to base on web 2.0 modern training simulation.

### 4 Empirical results and analysis

During the initial research process, we develop a questionnaire based on literature, named R1. A total of 76 questionnaires were sent out to WHO and the response rate was 89.54%, with a total 68 valid questionnaires returned. Figure 3 shows the percentages of positive answers to the questions in each section, separated into different age brackets. Most of the chiefs (92.6%) believe that the E-learning will bring significant improvements to troop training. However, the number of positive responses for the willing to manufacture is far lower (XX%), because some of older chiefs are not familiar with the production of E-learning material. According to these results, it is obvious that E-learning is important for troop training.

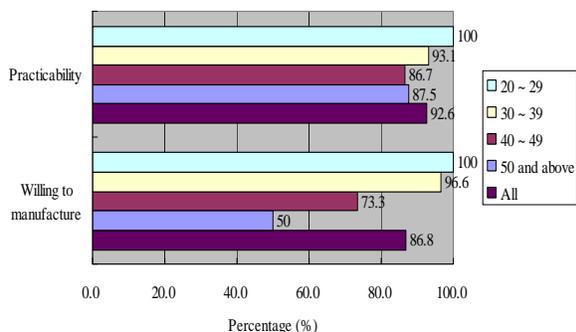


Figure 3. The percentage of positive answers in both sections for the different age brackets

After applying R1, we digitized the curriculum and used the training model mentioned in Section 3 in order to provide the 68 commanders with the E-learning material for their learners. We then used a second questionnaire, named R2, to evaluate the training model. We using a explore survey research simple sample, and the most important questions in R2. For example, animation and multimedia, graph and table, more interactive, simple to use, etc. Table 3 and Figure 4 show that most of instructors (85.3%) felt that E-learning is an efficient learning method, because learners can study themselves anytime and anywhere. In addition, 79.4% of the instructors responded that the learners generally made good progress with E-learning. Otherwise, a few of them do not agree that while the elder is not as good as younger who has omnibus computer skills.

Table 3. The statistic questionnaire of agreement with the developments of E-learning for age ranges

Age	The number of effective samples	e-Learning Inducted	
		Efficient learning	Grade progress
50 and above	8	6 (75.0%)	3 (37.5%)
40 ~ 49	15	12 (80.0%)	12 (80.0%)
30 ~ 39	29	25 (86.2%)	25 (86.2%)
20 ~ 29	16	15 (93.8%)	14 (87.5%)
All	68	58 (85.3%)	54 (79.4%)

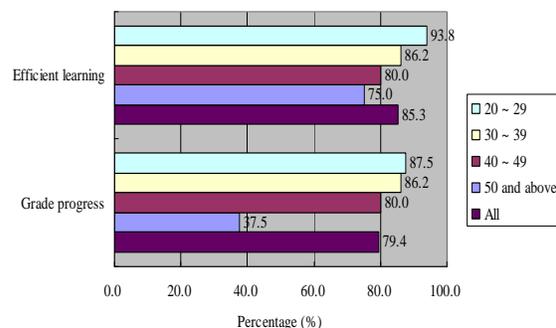


Figure 4. The percentage of positive answers in both sections by different ages for the R2 questionnaire

Table 4. Four presentations in significance order of 68 chiefs

Item	The number of agreements	Percentage
More Interactive	63	92.6%
Animation and Multimedia	57	83.8%
Graph and Table	44	64.7%
Simple to use	39	57.4%

As shown in Table 4, there are four presentations for learners: 1) more interactive, 2) animation and multimedia, 3) graph and table, and 4) simple to use. From up to bottom, in order, is the significance of the chiefs. Among these, most chiefs agree that learners can get great improvements by way of interactive over and over. In opposition to the interactive, the fourth, simple to use, is not paid attention any more since the other presentations can help learner understanding and the younger has good computer skills, simultaneously. By analyzing the responses to both R1 and R2 questionnaires, we thus make some E-learning propositions for Troop Training Process improvement (TTPi), as shown in Figure 5, including about “E-learning attitude”, “E-learning ease of use”, “E-learning safety”, “training behavior” and “training efficiency”. Finally, we develop a Troops Training Process improvement (TTPi) model, as shown in Figure 6..

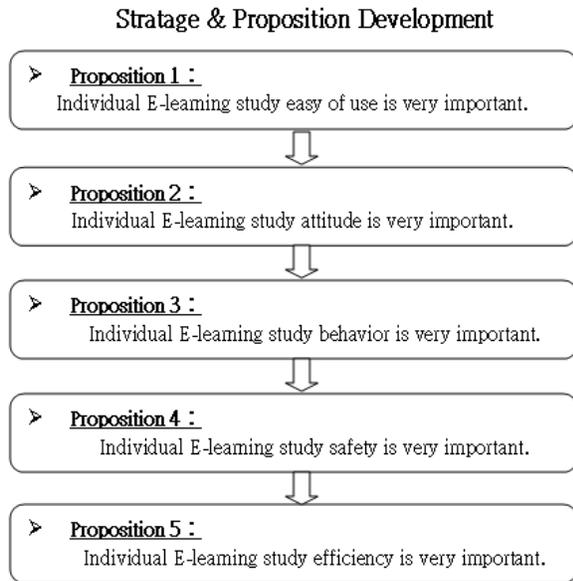


Figure 5. Research Proposition Development

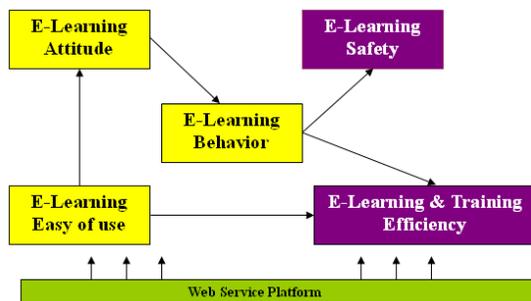


Figure 6. The new direction of E-learning for the Troops Training Process improvement (TTPi) model

## 5 Conclusion and limitation

### 5.1 Conclutions

E-learning is becoming more popular for troop training a number of countries. E-learning implementation faces some specific challenges. Where incorrect learning can lead to injury or death, Thus it is need for valid e-learning is further heightened [2]. The study has five item propositions. As shown by the results, futher more in this research we found that the military training with web service 2.0 is still at embryonic stage. Thus, in this study we make open questionnaire survey method and materials, we hope to construct military training new method and improve traditional training method. Thus, in this paper we propose an empirical study of E-learning

for troops with the aim of enhancing training efficiency. In this research, we conveniently selected one virtual troop as our sample, called C troop. Sixty-eight copies of the questionnaire were collected.

Our results found that E-learning plays the most important role in troop training; thus traditional training should be changed to take advantage of the new technologies and techniques available, such as web service and XML. This study has provided a training pattern for troop training to be suitable with troops and build a model for troops training, and conclude with suggestions for future research. Thus, we considered the efficiencies of troops training and managing to be rapidly improved is a important issue and worth continuing to make deep research. In this paper we have also reviewed several theories relating current content and status of E-learning, we propose an E-learning style for troops.

Finally, this research find that inducts E-learning systems method in the troops, and we develop a TTPi model, based on TAM theory and web service construct, which in view of uses manufacture of superiority, E-learning and TAM, the E-learning material and the study utilizes several studies with the troops, the development strategies and of the pattern and so on, carries on the analysis, the findings collects entire as follows, we found the TAM theory utilizes in E-learning and troops training studies is very suitable, and We develop a TTPi model for Troops to improvement training efficiency.

### 5.2 Limitation

Due to the following limitations in the current study, findings of this study should be interpreted with caution, and further verification is suggested. First, the troop which is a Seal and centralization organization, consequently, changing the Troops traditional education training methods, and improvement tradition training method must earn the higher order manager's support. Second, in the current study find another limitation in generalizing for the future study, the findings into the troop unit if

the randomness of the sampling is violated. In future works, this research can be repeated with a larger sample, which will make the results more representative.

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