Virtual Policing in English: A Trainee-centered Pedagogy for Web-mediated Curricular Learning and Field Training

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Abstract—In contrast with the traditional web-mediated English learning emphasizing curricular presentation, we propose a Virtual Policing in English (VPIE) pedagogy----a unique and innovative application of several latest web technologies in scenario-based interpersonal interactions ---- for the trainee-centered police English learning and field training based on Virtual Enterprise and other recent studies. Five key components of the VPIE network include the STARS model Curricular Learning developed with Dreamweaver 8 and Ulead Video Studio 11 to strengthen experiencing and interactions; the core function of VPIE Field Training implemented with a Scenario Base through a dynamic platform developed with Microsoft Visual Studio 2005 asp.net(c#) or with the assistance of QQ International 1.2 to sustain the participant's interests; the Student Voice forum and reflections to ensure the priority role of trainees; synchronous web-lecturing and asynchronous consultation Tutoring to meet individual demands; and lastly a tertiary index quantitative Assessment system to provide a fair and standard evaluation. Outcomes of VPIE practice are consistent to the demanding skills of cross-disciplinary talents and the promising Virtual Service Learning premised on VPIE is being implemented in a wider variety of educational settings and disciplines.

Index Terms—Virtual Policing in English (VPIE), virtual, network, construction, curricular learning, field training, assessment

I. INTRODUCTION

Computer Assisted Instruction (CAI) as a main educational method has been gaining attention in the teaching of a vast range of subjects in recent years in China. Educational institutions of different level unexceptionally turn to CAI in multimedia sound labs for English language learning and training in view of the advantages of using software and facilities in curricular presentation and self-paced consolidation. Disadvantages, however, shouldn't be minimized; the most serious one of which we found during the past ten years of computer assisted English instruction is the decrease of amount of human interaction. Teachers and students feel "blocked" or "isolated" by the computer screens, the larger desks and technological convey of information resulting in less eye contacts and less instantaneous response compared with traditional classroom interaction. How to enhance

interactions among all the participants with the help of web technologies came to our attention several years ago.

Our first inspiration came from Virtual Enterprise which is a unique, experimental-learning methodology wherein students create and operate their own virtual business in a global economy of over 4,000 firms in 40 countries. Virtual Enterprise methodology works from awards, to research, to faulty development, to adult education, and at-risk students, to the creation of well-prepared entrepreneurship students [1]. The conclusion is similar to our findings in applying the essence of Virtual Enterprise into the virtual policing training, shifting the contents from business to policing service and keeping the appealing feature of laying stress on using computer network which makes Virtual Enterprise outstanding from practice firms in Europe and China, and also an innovative approach to cultivate students the entrepreneurial awareness to enable them to master the entrepreneurial skills and resolve practice problem besides ways proposed like through the establishment of business associations, setting up a business park, and carrying out business plan competitions, etc [2] .

The second inspiration came from Service-learning. "Service-learning is a method under which students or participants learn and develop through active participation in thoughtfully organized service that is conducted in and meets the needs of a community [3]." It allows students to involve in service tasks based on experiential learning as the foundation for intellectual, moral, and civic growth. The key components of Service-learning are curricular connections, student voice, reflection, community partnership and assessment. The success of Service-learning provides us a ready-made model to follow as policing itself is a specific service, what we need to study is how to carry out various police service through web-mediated technologies.

The outcomes of some latest studies worldwide on virtual or anonymous status learning are also positive. Virtual Philosopher was an online tool provides active learning activities built around various scenarios that the learner works through in a process of self-discovery. Through these scenarios and the responses provided by students, the Virtual Philosopher identifies flaws in the learner's thought processes, forcing the learner to evaluate and re-evaluate why she or he thinks in a certain

way. According to Hornsby and Maki, the asynchronous environment "seemed to reinforce deeper learning" and promotes problem solving and critical analysis [4]. Another study found that online writing assignments using pseudonyms can be an effective teaching strategy that induces higher online participation, especially among students who are hesitant to participate in a traditional classroom setting. In this anonymous context, students prefer gender-free pseudonyms, assuming no human identities online, in contrast to a previous research that considers pseudonyms as a form of expression of one's preferred identity [5].

II. VIRTUAL POLICING IN ENGLISH PEDAGOGY

Virtual Policing in English (VPIE) is a trainee-centered police service simulation English learning and training program in which participants conceive, develop and manage virtual police organizations to fulfill their duties and services on a global basis utilizing various web-mediated technologies [6]. VPIE was coined by the author as a unique and innovative application of web technologies in scenario-based interpersonal interactions. VPIE emphasizes project-based collaborative learning and training to enhance the trainee's vocational skills and career success by experiencing potential working roles with sustained interests.

English teachers, professional course teachers, computer teachers and policing experts constitute the organizing committee and to be mentors in VPIE to supervise, guide and evaluate trainees' activities. A virtual Police Commissioner with qualified English, computer and professional knowledge competences, teamwork spirit and leadership is nominated by the committee to be in charge of the running of the virtual Police Headquarters. Undergraduates majoring in Police Administration, Social Order Administration, Criminal Investigation, Cyber Crime Investigation, Criminal Science and Technology, Criminal Justice, Security Protection and Traffic Administration set up corresponding police department to simulate the running of different police institutions.

Under the guidance of the mentors, VPIE trainees work in teams to publicize VPIE concept, collect funds, recruit new staff, elect their Police Chiefs and branch leaders, ascertain necessary resources, design logo and service contents on the virtual police department websites, visit VPIE Network for curricular learning and virtual policing training via the Campus Net, the Police Net and the Internet, fulfilling police tasks or services through interactions with other participants domestically and internationally. Trainees are involved in all aspects of police service, including exit and entry administration, traffic control, dispatching 110 calls, providing online assistance to the public, establishing and handling of criminal cases, interrogating suspects or witnesses, investigating crime scenes, arresting suspects, supervising and administering prisoners, cooperating with the Interpol, meeting foreign delegations and organizing multinational conferences.

III. CONSTRUCTION OF VIRTUAL POLICING IN ENGLISH NETWORK

To achieve the goal of striving for a trainee-centered program, the network is mainly designed to serve for the trainees including students of police academies, working police officers, future law enforcement agents, whose reflections, suggestions or appeals are taken into account, and whose performances in VPIE are impartially evaluated. It's also designed for the mentors including teachers of police English or other professional courses, who lecture in multi-media classrooms, provide after-class tutoring, analyze trainees' feedbacks and make assessment; field experts including experienced policing experts and psychological experts who render assistance, advice or consultation for the trainees and on the running of the program. The last group of users includes service recipients like native English speakers or visitors playing roles other than policemen in the virtual policing training and acquiring necessary policing information.

The homepage of the network consists of Register and Login, Recording and five key components including Curricular Learning for classroom instruction and self-paced learning to improve language experiencing and interactions; Field Training for knowledge consolidation and virtual policing training to sustain training interests; Tutoring for web-assisted instruction and learning consultation to meet individual demands; Student Voice for online forum discussion and students' reflections to ensure trainees' views are taken into account; Assessment for a fair and quantitative evaluation on each trainee by him/herself and other participants.

Virtual Policing in English training and role-play are utilized in both the learning and training process, being the key ingredients of the VPIE Network as listed in Figure 1.
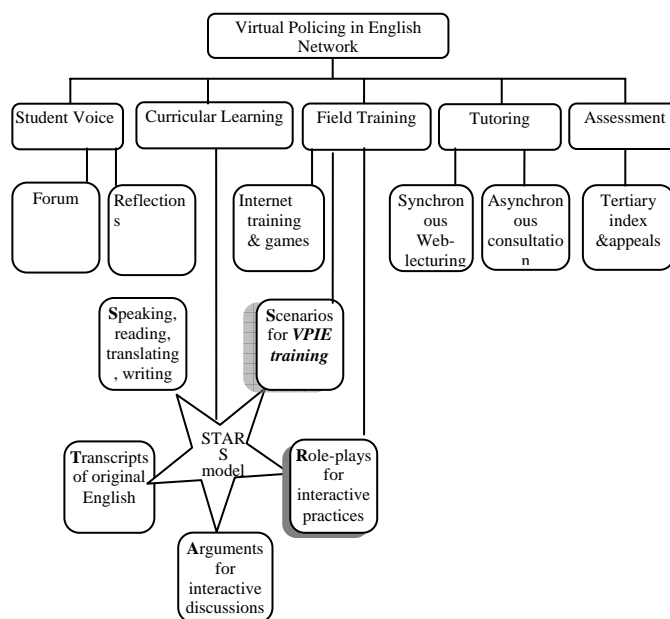

Figure 1.   Framework model of Virtual Policing in English Network.

A. STARS Curricular Learning

VPIE learning is characterized by a STARS model based on Learning-by-doing and Project-based teaching. *English for Elite Police* was selected by 531 undergraduates of Grade 2007 as their optional course textbook in 2009, which contains 11 units of Police Academy, Foreign Affairs Administration, International Liaison and 8 undergraduate majors in the Academy [7]. Every unit consists of Speaking and listening, Transcript watching, Argument, Role-play, Scenarios (STARS in acronym) and other sections like Good to remember, Policing document writing, Translation, Case study, Background information reading and Time for fun. All the contents are refined from materials of original police transcripts and the author's policing field interpreting manuscripts with elaborate exercises [8].

Integrating original police transcripts into curricular learning is another feature. A transcript refers to a record of a call to 911or a policing event. Efforts are made to resume the context of the event so as to strengthen language experiencing. First, through browsing official crime reports, visiting police websites, searching some of the relevant key words on Google or obtaining from foreign police departments, sufficient textual, audio or visual data are collected and analyzed. Then explanations, titles are added while repeated, irrelevant contents are deleted with Word 2007, PowerPoint 2007 and Ulead Video Studio 11 for those typical transcripts with standard use of policing phrases. The first phase edited textual transcripts is either the reading material of Case study or the scripts for second phase audio and visual courseware development. The scripts are read or acted by some native English speakers and recorded by audio development tool cr-cooledit or DV, then edited with Ulead Video Studio 11 to add sound effect, titles and explanations as shown in Figure 2. Background information and discussion topics are attached to the transcript for further comprehension and consolidation.

Figure 2.   Transcript developing with Ulead Video 11.

The Curricular Learning is utilized in a multi-media classroom or a sound laboratory for the face-to-face instruction or anywhere on a computer with the access of VPIE network for the self-paced learning after class.

B. VPIE Field Training

Very few educational institutions present sufficient training for the learners on China National Exquisite Courses Recourses Network. Training and learning goals in VPIE are equally important and elaborate efforts are made to strengthen the core function of virtual training and computer-human interactive training.

(1) The Scenario Base

VPIE training is carried out in accordance with scenarios designed at the end of each unit in *English for Elite Police*, with the purpose of applying all the learnt knowledge to the practical work. A Scenario Base is constructed to provide roles, icons and plots for VPIE training. A trainee can select a virtual role of a police academy student, a 110 dispatcher, a community policing officer, a foreign affairs officer, a criminal investigation officer, a patrol officer, a traffic police officer, a criminal technology officer, a security protection officer, a cyber crimes police officer, a criminal justice officer or an international liaison officer, while others online can select a virtual role of a suspect, a criminal, an offender, a victim, a witness, an applicant, an inquirer or a visitor. The icons of the suspects, for example, include photos, pictures or icons of various appearance characteristics for a witness to describe.

The scenario *Questioning a witness* can be retrieved either through *Police officer-Social order police-Questioning a witness* sequence or *Others-Witness-Robbery* sequence with the plot, pattern phrases and icons:

Scenario: *You* *are questioning an overseas student* *who has just witnessed a robbery on the Beach Road, in which a young lady was robbed by two tall bald-headed men in sunglasses and with a knife, they ran away in a black Volkswagen Jetta 1.4 TSI car.*

Pattern phrases:

1. Questions police ask witnesses

- *You witnessed the robbery just now, didn't you? Are you OK to answer some questions?*

- *When did it happen? And what did you see?*

- *What was he wearing? Did he have a weapon? Was it a gun or a rifle? What kind of car was the robber driving?*

- *Thank you for your patience and cooperation. If you think of anything else, please notify us.*

2. Description of a suspect

- *He was wearing sunglasses. He had a mustache/ beard. They were wearing gloves.*

- *He looked like an Asian. He was dressed in black. He had a baseball cap on.*

- *Hair: short, long, shoulder length, curly, straight, spiky, brown, blond, black, red, in a ponytail*

- *Body: skinny, fat, medium build, muscular, tall, short, average height*

The scenarios are the scripts for a presentation, a play, a simulated press conference, in most cases, for the web-mediated VPIE training.

(2) VPIE training

VPIE training is implemented through a platform developed by Microsoft Visual Studio 2005 asp.net(c#) to realize the following functions: A trainee registers with his/her police ID and logs in the next time, selects a scenario from the Scenario Base or creates a new scenario, establishes requirements for the potential virtual partner(s) in English proficiency, major, even gender preference, starts fulfilling the virtual task or service by typing, audio or visual chat when other participants agree to act the virtual roles, or cancels all the requirements and takes a part in another scenario available. See Figure 3:
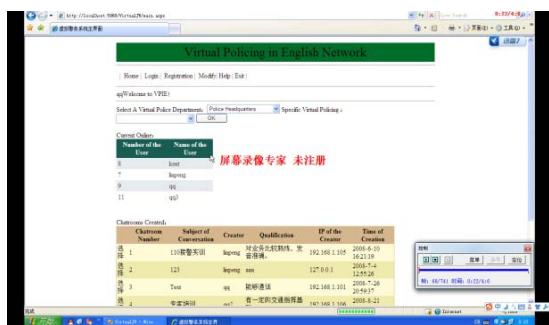

Figure 3. A trainee creates a scenario and starts VPIE training with another qualified participant.

Due to the lack of funds, visual chat doesn't work very well when more than 40 users visit the website. To overcome this problem, we turn to the free instant messaging computer program Tencent QQ international 1.2 for faster audio and visual messaging. When partners agree to start a scenario, each of them logins with his\her QQ account, changes his\her profile in *Main Menu-Settings-My Profile*, copies the icon and the virtual role from the Scenario Base to change *Icon* and *Nickname* (avoid entering some restricted contents like police or policeman directly, use a substitution like a cop or an officer), add *Personal Massage* if necessary with further description of the event, like *for a robbery, in a car accident*, and then clicks *Start Video Call* or *Start Audio Call* button for the VPIE training, participants may type, have a audio or visual chat, send or open files, invite more contacts to join the discussion, ask for or accept remote assistance.

Participants see real appearance of one another in a visual chat, this is especially disadvantageous to a training among acquaintances, but the advantages of visual chat are, first of all, body language like facial tics, eye movements and hand gestures can reveal the other's personal traits and genuine thoughts; secondly, proofs, clues or any other objects can be shown through the camera. Compared with the visual chat, communication through typing and audio chat is more suitable for the VPIE training. See Figure 4 for details of the training process as illustrated in the scenario *Questioning a witness* implemented via QQ international 1.2.

Figure 4. A witness answers a police officer's questions and opens the sent file to describe the suspect.

QQ international also serves as an excellent tool for entire VPIE pedagogy, Table 1 lists some functions of QQ used in VPIE besides messaging:

TABLE I.
FUNCTIONS OF QQ INTERNATIONAL 1.2 USED IN VPIE TRAINING

By using QQ	In VPIE training	
	Activities to	Advantages
Smart Friend Finder	find more participants	worldwide and directly
Send Files	send files instantaneously to another QQ user	more quickly and conveniently
Invite Contacts	join the current discussion	with more participants in a discussion
Groups/Discussions	show a model training	to the whole class or a group
Qzone	keep the trainee's homework, messages, feedbacks	to be assessed by other participants
Screen Capture	send a screenshot to his\her Qzone	to be the evidence of online training
Message History	check discussion contents	to be assessed in language proficiency
Translator	translate Chinese or English	to improve English competence

(3) Computer-assisted interactive training

In addition to the above mentioned interpersonal interactions in face-to-face instruction and web-mediated VPIE training, computer-human dialogue is also designed for listening and speaking practice. An original two-speaker dialogue is cut into two categories for each speaker, made to a new dialogue with one speaker silent with Ulead Video Studio11. Then the scripts of the silent speaker is edited with lyric editing tool LRC and Winamp player before being played with a music player, the computer only reads the scripts of one speaker, keeping silent while the scripts of the other speaker displaying on the screen, meanwhile the trainees play the role of the other speaker with the reference on the screen within the original interval for the silent speaker like a KARAOK with more fun and practice efficiency.

Other computer assisted interactive exercises include translation practice which allows trainees to determine when to check the correct answer, key words, phrases or grammar explanation; discussion practice which allows trainees to view the background information, join a discussion and reading references; audiovisual and speaking practice which allows trainees to watch original

police videos on the websites of leading police departments in English speaking countries like the Federal Bureau of Investigation, New York Police Department, the Metropolitan Police, the Royal Canadian Mounted Police and Australian Federal Police; writing practice which allows trainees to write police documents and quizzes and tests which enable trainees to check multiple choices answers.

(4) Other internet virtual training and police games

VPIE training also provides trainees free internet-based virtual training and games to sustain training interests. Virtual enterprise networks worldwide are platforms for users to participate virtual business activities to train interpersonal and communicative skills in commerce, entrepreneurship and technology. Free English law enforcement online games help users to improve specific professional competence, ZAP DRAMATIC On-line Negotiation Games imitates negotiating with criminals under emergent circumstances, and Virtual Courthouse game enables players to submit disputed claims, responses and supporting material in digital form for resolution by a neutral provider.

C. Student Voice

Student Voice is a channel through which trainees express their viewpoints on any aspects of VPIE pedagogy, the first is an online forum on which trainees login, create a new topic, post, modify or delete the post, and others answer it with positive or negative viewpoints. The mentors visit the forum frequently to learn the suggestions, criticism or approvals from the trainees and make appropriate adjustments accordingly. The second channel to learn the student voice is to check emails sent to the teachers or uploaded reflections in their Qzone on their learning and training experience, including what they were assigned to do or what they wanted to do, what they did, what they did well, how they could improve next time and what they got from this experience. Their reflections are key ingredients for their assessments as well as feedbacks which is compiled and reviewed by the Organizing Committee. Revision, adjustment, deletion, addition or updates of the curricular contents, training method, software development, facility innovation and program administration are all based on the student voice.

D. Tutoring

The Asynchronous or synchronous tutoring, as a supplement to classroom instruction, offers the trainees opportunities to be tutored individually or in a group after class.

Asynchronous tutoring provides trainees non-emergent assistance from the teachers or expects when they are offline. A trainee fills in his\her registered personal information including user name, password, gender, grade, class, major or police number, telephone and email to leave a message with a title of the question, the detailed contents to the expected person answering the question. The trainee may choose a private mode to view the answer privately or public mode to view the answer on the forum.

Besides the common synchronous tutoring of consulting a teacher or expert directly, trainees of VPIE may also attend a web-lecturing through a free web conferencing tool Mikogo. The instructor registers first and gets an ID, all the invited trainees join the lecture with the ID and watch the screen contents presented by the instructor on their individual computers, and students discuss, talk with the instructor, write or draw on a whiteboard and share electronic files.

E. Assessment

A common problem in web-based learning on China National Exquisite Courses Recourses Network is the lack of scientific or quantitative assessment standards. VPIE recently adopted a tertiary index assessment system to standardize online learning and training assessment, which consists of primary index with proportion of 1. Motivation and prospect (0.05), 2. Learning (0.20), 3. Training (0.20), 4. Forum participation (0.05), 5. Reflections (0.05), 6. Homework (0.15), 7. Quiz and test (0.20) and 8. Self-assessment and other's assessment (0.10). Take 8. Self-assessment and other's assessment as an example, the primary, secondary and tertiary indexes are listed in Table 2:

TABLE II.
THE PRIMARY, SECONDARY AND TERTIARY INDEX OF SELF-ASSESSMENT AND OTHER'S ASSESSMENT

Primary index (proportion)	Secondary index (proportion)	Tertiary index (proportion)
8. Self-assessment and other's assessment (0.10)	8.1. Self-assessment (0.60)	8.1.1. Actual improvement (0.40)
		8.1.2. Definite shortcomings (0.30)
		8.1.3. Clear cause analysis (0.10)
		8.1.4 Feasible countermeasures (0.20)
	8.2. Other's assessment (0.40)	8.2.1. Actual improvement (0.40)
		8.2.2. Definite shortcomings(0.30)
		8.2.3. Clear cause analysis (0.10)
		8.2.4 Feasible countermeasures (0.20)
	8.3. Appeals if necessary	8.3.1. Anticipated score
		8.3.2. Reason

III. IMPLEMENTATION AND OUTCOMES

VPIE has been practicing and revising with application surveys and feedback analysis for nearly ten years, it's been implementing in the teaching of grade 2007, 2009 and 2011 undergraduates of police majors in Liaoning Police Academy.

The mentors taking part in VPIE program benefit from the using of multimedia facilities and VPIE network, shift roles from teachers to mentors and coordinate with police experts as well as professional course teachers. Experts enhance the opportunity to learn the latest police technology theory and practice in the cross-disciplinary organizing committee.

VPIE pedagogy, as a supplement to the field internships, can not only decrease expenses and save time for the police academy and the students, but also improve communication in English skills, multicultural awareness,

information retrieving, collecting and analyzing skills, computer literacy and web skills, and interpersonal skills of conflict resolution, teamwork and cooperation. Participants learn from success and mistakes without economic loss or physical danger.

The dynamic nature of VPIE training appeals to most of the participants, one can try different virtual roles to interact with different people. Survey at the end of English for Policing course of grade 2007 in July of 2009 showed that most of the students felt more motivated, interested and *"absorbed by the brand-new learning and training methodology," "enjoyed learning the knowledge closely connected with our future job," "had great fun changing whatever future job role in the virtual policing training."* Majors of Cyber Crimes Investigation of Class one, grade 2011 were asked to rearrange the sequence in preference of the way they'd like to conduct the training in a recent survey: 1. In front of the classroom, 2. On the seats, 3. Real name in the multimedia classroom, 4.Anonymously in the multimedia classroom, 5. Real name on the Network after class, 6. Anonymously on the Network after class. The first choice to the last one is rated as 5 points to 0, the sequence and score is shown in Table 3:

TABLE III.
SEQUENCE OF FAVORITE TRAINING WAYS FROM THE STUDENTS' PERSPECTIVES

Sequence	Ways	Score
1	Anonymously in the multimedia classroom	63
2	Anonymously on the Network after class	47
3	Real name on the Network after class	41
4	In front of the classroom	40
5	On the seats	38
6	Real name in the multimedia classroom	28

The results show a great preference of anonymity over real name, other preference factors include familiarity, autonomy and excitement involved, because multimedia classroom is the place where interactions among familiar participants (classmates and the teacher) take place, and among all the real name choices, training on the Network is autonomous than in the classroom, and training in front of the classroom is more exciting than on the seats, it's neither exciting nor anonymous for a real name training in the multimedia classroom. Another reason why anonymous training on the Network wasn't the first choice is due to the slow net speed, financial expenses and limited free time in the Academy [9].

There are problems and deficiencies we need to work on. To start with, VPIE training doesn't work fast enough on the platform developed by ourselves and isn't convenient enough to change icons and nicknames on QQ international which can be solved by more financial investment to improve the software functions. Secondly, the scenarios are not sufficient to cover all policing tasks and not authentic enough in complexity and depth of the police work which will be overcome by obtaining more case transcripts from police institutes; the scenarios are not "real" either in background setting or sound effect which can be improved by Virtual Real or animation technologies, such as wireless motion sensors being used to provide the users in computer games and virtual reality with an intuitive way to control their virtual avatars by directly performing actions [10]. Lastly and most seriously, there is still a long way to go before VPIE pedagogy being supported by authorities and popularized in police departments to earn sufficient funds which is the key to most of the existing problems.

Guided by the philosophy of "Try your best and forget the rest" in the Foreword of *English for Elite Police* and encouraged by the approval of experts in the field*,* we will definitely press ahead with theoretical and practical studies on VPIE. Most recently Virtual Service Learning pedagogy deriving from Virtual Policing in English is being practiced in Dalian Vocational and Technological Institute, Dalian Polytechnic University and Liaoning Normal University in a wider variety of educational settings and disciplines.

IV. CONCLUSIONS

A Virtual Policing in English pedagogy was coined, conceived, practiced in Liaoning Police Academy in order to overcome the decrease of amount of interpersonal interactions in computer assisted instruction. The originality of VPIE lies in the first methodology in education to implement real interpersonal interactions with virtual scenarios through software and web technologies. This study focused on the construction and implementation of VPIE Network, functions of which are characterized with improving language experiencing and interpersonal interactions in virtual environment, listening to trainees' voices, standardizing assessment criteria and providing individual tutoring. The paper also expounded on detailed development method of transcripts and a Scenario Base, utilization of free software like QQ, Mikogo so as to optimize the desired functions. Outcomes of VPIE pedagogy are positive with feasible modification and countermeasures to some existing deficiencies. Further improvement will focus on wider discipline application of Virtual Service Learning based on Virtual Policing in English pedagogy and practice.

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