

Evaluation of Teaching Skills for PTIK UNIMA Graduates in North Sulawesi Vocational High School

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Abstract. The purpose of this study was to evaluate the teaching skills of PTIK UNIMA graduates. This research is important to be carried out in the context of making decisions to revise the curriculum, especially educational subjects so that PTIK graduates have pedagogical competencies that are able to transfer the knowledge and technology they master to students so that they can produce a professional, competitive, and characterized workforce of professional educators in order to face competition. in the era of globalization. This research is an evaluative research designed to be conducted for 3 years. Field research was carried out in vocational schools in 10 out of 15 districts/cities in North Sulawesi with the stages in the first year being 1) pre-observation of field research; 2) designing evaluation instruments; 3) validation of expert panelists; and 4) revision of the evaluation instrument draft. This research was assisted by 4 students from the Information & Communication Technology Education Study Program, and student participation will be recognized in several courses as a form of implementation of Merdeka Belajar Kampus Merdeka (MBKM). Based on the results of the research and discussion, the PTIK graduates who are spread throughout the Vocational High Schools (SMK) can be concluded as follows: (1) The majority of teachers who are placed in the 10 regencies of North Sulawesi are teaching in accordance with competence, supported by their status as Civil Servants, THL, PPPK. (2) The infrastructure in schools supports online learning by continuing to provide internet facilities and computer equipment needed. (3) Majority of the teachers who graduated from PTIK UNIMA has conducted a learning process that utilize learning devices, even though the use of those tools can be maximized even more. (4) The instrument draft produced was founded in the pre-field observation stage. As a suggestion, there should be further research to reclarify the pre-survey data in order to continue the process of making the instruments to be tried out and revised, until the final product of the evaluation instruments are obtained.

Keywords; Teaching Skills, PTIK graduates, Vocational School.

INTRODUCTION

Teachers as professionals in education field play important roles in creating future generation that are intelligent, superior, and competitive to be able to compete in this global era. Therefore, Lembaga Pendidikan Tenaga Kependidikan (LPTK) as a higher-education institution that create professionals in education should conduct evaluations for its graduates to be aware of the areas of improvement that should be worked on that are displayed in the workplace, specifically in middle-school level. [1-2]

Pendidikan Teknologi Informasi dan Komunikasi (PTIK) in Fakultas Teknik UNIMA is the only faculty that produces TIK Teachers in North Sulawesi that has the privilege to partner with Vocational Schools (Sekolah Menengah Kejuruan) in North Sulawesi that aims to produce SMK Teachers in this area. The data shows that there are 93 Vocational Schools (41 Public Schools and 52 Private Schools) that are across the province. And due to the limited numbers of professionals with the capability to teach, the schools generally recruit the graduates from PTIK UNIMA as honorarium teachers to fulfill the gap. These teachers are expected to have the skills needed to teach to be able to transfer the knowledge they have acquired to the students, both in Computer dan Network Engineering major and in Multimedia major in Vocational Schools.

As teachers, the PTIK graduates should have the set of competencies; knowledge, skills, and characters that they should possess, live, and master in conducting their professional responsibilities. And those competencies should be holistic and integrative that also cover the areas of knowledge, skills, characters, and social.

One of the competencies is the pedagogic skill that refers to the teacher's ability to manage learning activities/processes in the classroom. Several indicators of pedagogic competence are: 1) mastering the characteristics of students; 2) mastering learning theory and educational learning principles; 3) curriculum development; 4) educational learning activities; 5) developing the potential of students; 6) good communication with students; and 7) assessment and evaluation [3] includes basic teaching competencies such as in opening lessons, in asking questions, in providing reinforcement, in teaching variations, in explaining, in guiding, in managing classes, in closing lessons and providing reflection [4].

This pedagogic competence refers to the mastery of the content as well as the practice of it in the learning proves to implement the concept and the principles of the innovative learning in order to develop the effective learning in the 21st century [5].

Some of the 21st century skills are seen very relevant in the learning process in Indonesia, such as critical thinking and problem-solving skills, creativity and innovation skills, cross-cultural understanding skills, media literacy, information, and communication skills, computing and ICT literacy skills, and life and career skills [6]. The 21st century education requires the real-world skills that involve the communication, collaboration, critical thinking skills for their significance for the humankind, with various cultural backgrounds in order to interact without limit [7]. It

both in Computer dan Network Engineering major and in Multimedia major in Vocational Schools. As teachers, the PTIK graduates should have the set of competencies; knowledge, skills, and characters that they should possess, live, and master in conducting their professional responsibilities. And those competencies should be holistic and integrative that also cover the areas of knowledge, skills, characters, and social. One of the competencies is the pedagogic skill that refers to the teacher's ability to manage learning activities/processes in the classroom. Several indicators of pedagogic competence are: 1) mastering the characteristics of students; 2) mastering learning theory and educational learning principles; 3) curriculum development; 4) educational learning activities; 5) developing the potential of students; 6) good communication with students; and 7) assessment and evaluation [3] includes basic teaching competencies such as in opening lessons, in asking questions, in providing reinforcement, in teaching variations, in explaining, in guiding, in managing classes, in closing lessons and providing reflection [4]. This pedagogic competence refers to the mastery of the content as well as the practice of it in the learning proves to implement the concept and the principles of the innovative learning in order to develop the effective learning in the 21st century [5]. Some of the 21st century skills are seen very relevant in the learning process in Indonesia, such as requires trainings and basic aptitudes for someone to acquire certain skills that allows them to produce something that is worthy in a shorter period of time Therefore, the skills should be achieved through education and training process in a credible institution. For instance, in order to have the skills to teach, one should gain the knowledge through educational process to be able to master the contents in the education field, then proceed it to teaching practice (student-teaching) that could start from peer teaching and continue it to classical teaching in classrooms.

Some research concluded that the learning online system is very helpful in the era of COVID-19 pandemic, however, the implementation of it in the context of vocational schools should be re-reviewed [8]. And in order to apply the innovative learning effectively, the teachers should be able to comprehend and apply the STEAM learnings that are according to its concepts and

principles, follow the steps and procedures that are based on the Neuroscience concept, digital learning, and blended learning in the classroom teachings [9].

Digital learning is indeed a crucial topic a teacher should master. Also known e-Learning or Technology Enhanced Learning (TEL), it is defined as the learning that innovatively involves the use of digital tools and technologies in the teaching and learning process [10]. Digital learning is a fun media that could evoke excitement of the learners toward the learning itself. Students can learn in different time and different space. It could also enhance the students' learning experiences with the use of both tools and practices, including the online assessment and formative assessment, to increase the focus and the quality of the resources and teaching time allocation, online content, and technological application. Therefore, it is important for PTIK to conduct an evaluation regarding the competencies of the graduates that have been working in the workplace, both under the public schools and private schools as teachers in educational institutions. This evaluation should happen in order to make decision for the improvement of the institution in the future [11]. One of the competencies that should be reviewed is the pedagogic competency, specifically the teaching skill. It is seen as crucial for the sake of the curriculum to be improved. The curriculum in a university program should regularly be refined following the updated research and the needs of the stakeholders [12]. It relates closely with the evaluation of the PTIK graduates in mastering the characteristics of the students, understanding the learning theories and principles, developing curriculum, generating the potentials of the students, good communication with them, and the right assessment. This research is also important to be conducted in order to make decision about revising the curriculum, specifically the courses in the program so the PTIK graduates can possess the pedagogical competency that allows them to transfer knowledge dan technology to the students, in order to produce intelligent, superior, and competitive. Apart from that, this research is also feasible to be done, especially since the learning material that will be developed is very closely related to President Joko Widodo's direction regarding the focus of developing Indonesian research in the future that focuses on digital technology. The purpose of this study is to evaluate the teaching skills of PTIK graduates at Manado State University.

This research roadmap begins with relevant previous research, currently proposed research (Penelitian Dasar Unggulan Perguruan Tinggi, proposed 3 years, 2022-2024), and the future potential research. The foundation for this research is to examine the effect of teacher readiness on the learning outcomes of Vocational High School students in South Minahasa, North Sulawesi, Indonesia [13]. The results of this most relevant study concluded that there was a significant positive relationship between teacher readiness and student learning outcomes, so it was suggested to increase teacher competency in the readiness of the teaching and learning process. Departing from this conclusion, it is necessary to conduct an evaluation study of graduates of the engineering education study program at the Fakultas Teknik Universitas Negeri Manado, of which a large proportion are teaching staff at Vocational High Schools in North Sulawesi. Evaluation of the graduates is an inseparable part of achieving the standard competence of the program.

Our previous research that is no less relevant and forms the basis of current research is entitled "E-learning development process for Operating System Course in Vocational Schools", and "IMPROVE Methods Implementation to Improve the Computer Skills and Information Management Learning Outcomes of Vocational School Students" [14]. Both studies are more specific on the implementation of the method and process of developing an e-learning system which is a teacher's tool in supporting their readiness in the teaching and learning process. Reviewing the references that relate to the needs of the teachers in this era, in which TIK is one of

the strengths to create a high-quality education that can enhance the level of teaching, learning, and school management [15]. TIK is seen to provide solution and new services for learning activities, to offer new tools to improve knowledge and to enhance the students' interest

METHODS

This research is an evaluative type which was designed to be conducted in 3 years span of time. The field research is to be done in 10 out of 15 regencies in North Sulawesi, namely 1) Bolaang Mongondow regency, 2) East Bolaang Mongondow regency, 3) Sangihe Islands regency, 4) Talaud Islands regency, 5) Minahasa regency, 6) South Minahasa regency, 7) North Minahasa regency, 8) Bitung, 9) Kotamobagu, and 10) Manado. In the first year, the activities planned to be carried out are 1) pre-observing the field research; 2) designing evaluation instruments; 3) validating by expert panelist, and 4) revising the evaluation instrument draft. And if it is approved to continue in the second year, there will be: 1) field observations, 2) instrument trials, and 3) instrument revision until an evaluation instrument product is obtained.

RESULT AND DISCUSSION

In order to get the clearer picture of the real condition at school, the researchers conducted interviews, both online and onsite, with the teachers, the administrators, and the alumnae of the school to enhance the observation data. The researchers were also observed the classroom teaching and learning process through videos. Throughout the 10 regencies in North Sulawesi, 20 Vocational Schools were chosen as samples: with different status of accreditation (A, B, C, non-accredited), with and without ISO certificates, and with PK (Pusat Keunggulan) predicate. There were 56 PTIK graduates who are teaching in those schools, with variety of working status: civil servant, permanent staff, THL, P3K, and honorary staff. The courses taught are TKJ, TAV, Multimedia, Informatics, and TIK.

The data acquired from the direct observation at school and from videos, documents from schools, and from the interviews shows that only 20% of the equipment used is up-to-date. This is believed to be the results of the difficulties the teachers face in making and developing the learning tools that fluctuates very often. 50% use learning models in class and 25% use innovative learning models and the rest still use conventional learning models in learning. 50% of learning in schools already uses ICT such as the use of computers, including LCDs, both in the laboratory and in the classroom. And there are around 20% of teachers who have utilized Innovative Technology in Learning such as the use of media, and AI, AR and VR-based applications in learning.

The data shown is then used as study material to formulate a draft of a graduate teaching evaluation instrument, discussed with several representative teachers from several Vocational Schools and academic experts in the form of Focus Group Discussion (expert validation), including revising the draft instrument for testing in the second year.

A literature study has been conducted, with reference to the results of previous research and the basis for the research to be carried out, namely research that examines the effect of teacher readiness on the learning outcomes of Vocational High School students in South Minahasa, North Sulawesi. The results of this study concluded that there was a significant positive relationship between teacher readiness and student learning outcomes, so it was suggested to increase teacher competence in teaching and learning process readiness. Departing from this conclusion, it is necessary to conduct an evaluation study of graduates of the engineering education

study program at the Faculty of Engineering, Manado State University, of which a large proportion are teaching staff at Vocational High Schools in North Sulawesi. Evaluation of graduates is an inseparable part of achieving competency standards for study program graduates. Our previous research is no less relevant and forms the basis of current research, namely those entitled “E-learning development process for Operating System Course in Vocational School”, and “IMPROVE Methods Implementation to Improve the Computer Skills and Information Management Learning Outcomes of Vocational School Students”. Both studies are more specific on the implementation of the method and process of developing an e-learning system which is a teacher's tool in supporting their readiness in the teaching and learning process. Also listening to references related to the relevant needs of professional teachers in this century, (Livingstone), ICT is one of the driving forces in creating high quality education that can improve the quality of teaching, learning and management in schools. ICT is able to provide new solutions and services for educational activities, offers new tools to increase knowledge and can increase student interest

CONCLUSION

According to the results and discussion of the research, the conclusion to take is as follows: (1) The majority of teachers who are placed in the 10 regencies of North Sulawesi are teaching in accordance with competence, supported by their status as Civil Servants, THL, PPPK. (2) The infrastructure in schools supports online learning by continuing to provide internet facilities and computer equipment needed. (3) Majority of the teachers who graduated from PTIK UNIMA has conducted a learning process that utilize learning devices, even though the use of those tools can be maximized even more. (4) The instrument draft produced was founded in the pre-field observation stage. As a suggestion, there should be further research to reclarify the pre-survey data in order to continue the process of making the instruments to be tried out and revised, until the final product of the evaluation instruments is obtained.

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