Integration of Audio Visual Multimedia for Special Education Pre-Service Teachers' Self Reflections in Developing Teaching Competencies

Tri Sediyani[1*]   Yufiarti[2]   Eko Hadi[3]
1.Lecturer Department of Special Education, Faculty of Education, State University of Jakarta
2.Professor of the Department of Post Graduate Management Education, State University of Jakarta
3.Management Informatika, Department of Computer Design Multimedia, LP3I Jakarta

Abstract
This study aims to develop a model of learning by integrating multimedia and audio-visual self-reflective learners. This multimedia was developed as a tool for prospective teachers as learners in the education of children with special needs to reflect on their teaching competencies before entering the world of education. Research methods to develop models borg and gall for the development of multimedia audio-visual products are integrated. The technique of collecting data through observation, interviews in getting a needs analysis as a method for developing learning models.The results showed that students courses Teaching Competency Development (PKM) with audio visual multimedia capabilities integrated with self-reflection can help teachers teach students to develop their competencies in special education with disabilities and children with special needs.
Keywords: Development Model, teaching competence, Audio Visual, special education, disabilities.

1. Introduction

The world of education is a world that continues to experience growth. Increase of population, increasingly also increased the number of children who need an education. Some children are born with different needs compared to normal children in general. Their condition may have a physical disorder or developmental delays, learning disabilities, mental illness or even children with very high level of intelligence.

To be or a teacher of children with special needs , must pass several debriefing special education. Special training is intended for those who want to have career in the field of education. Someone who has character with a high level of patience, sincere love children with special needs students as difficult as any condition, will be fit to be a teacher The child with special needed .

Patience, creativity, and ability to organize a good indispensable. Especially to mention is the ability to understand the differences between individuals with one another, and also the ability to motivate children with special needs is a very important factor determining the success of a teacher for children with special needs. Often those who have the ability to identify and appreciate the slightest achievement of children students will more easily to the task of being a teacher for children with special needs. But of course, an educator must have a basic background of teacher education, but to be successful the necessary have intuition and patience.

State University of Jakarta as one of the institutions which produce educators. Educational institutions image as one of the producers campus that teacher actually becomes an important role as a highly qualified human resources form.

Development of Teaching Competence is one of the compulsory courses for student teachers at the Institute of Educational Personnel . This course shaped course which weighs 2 credits practice and performed as a prerequisite to follow the Field Experience Program , Professional Teacher Education .

Originally course it has the name Field Experience Program , a name change done from the academic year 2010/2011. Changes motivated by Act No. 14 of 2015 on teachers and lecturers, Government Regulation No. 74 Year 2009 on Professional Education Program for Teachers, which confirms that the teacher is a professional position are required to have academic quality with minimal education diploma S-1 / D-IV, and a certificate of education through professional education.

In order to determine the ability of prospective teachers in teaching it is necessary to equip the professionalism of teachers and peer teaching practice to see the ability to teach prospective teachers. No activity in peer teaching self-reflection from the video recorded at the time they teach, but they do not know that they are being recorded practice activities.

Reflection may sound like a lot of work, but preservice teachers like you report that they value and benefit from reflecting on teaching (Richert, 1990). Refection holds both immediate and long-term benefits for you as a teacher. Even now, reflection can enchance your learning about teaching and increase your ability to analyse classroom life, enable you to monitor yourself, and stimulate your personal and professional growth. (Cruickshank, Jenkins & Metcalf 2006)

Development of teaching competence is a compulsory subject in education courses outstanding. This

course prepares students to be able to manage learning from the planning, implementation and evaluation, especially in children with special needs.

We don't doubt that teachers are always trying to develop their own practice, but it is difficult to claim that these development processes based on focused practice have been studied systematically. A systematic approach means that the researcher's insight menurut Postholm and Tiller in (Postholm & Moen 2011) is focused on activities in practice, and it is insight that represents the systematic part of the work. The teacher is a professional job that requires four competencies, namely : 1) The ability of professionals, 2) Ability pedagogical, 3) social skills and 4) personal ability. With the competence that teachers will do the best for students and for education.

Teachers can formulate a research question like this without any input from researchers. However, whether this research question is created incooperation with researchers or by teachers working on their own, our experience indicates that it must be created ''from below'' and ''from within'' (Postholm & Moen 2011)

Professional teachers are able to develop the ability to teach a pleasant and qualified, motivated, and ensure students can learn and every time learning.

Traditional learning is an activity occurring at the classroom where teachers deliver learning material to students. Because of dependence on teachers, students should attend in every learning process and can't access learning material anytime and anywhere. (Astra, Nasbey, & Nugraha 2015)

All requires earnestness and sincerity are part and effective teaching. Another capability that is the reflection allows us to learn and experience. Reflection allows teachers to describe and think about what they are doing, know in advance the way out issues of class and professional experience, continuous and personal development. Research to advise that the Reflection associated with effective teaching, especially in the habit of teaching, classroom management and teacher expectations. In general, this course is a micro-teaching activities naturally implemented gradually.With the emergence of digital technologies, technology has become an indispensible part of educators and students live, changing the way teachers and students interact and learn in a technology-rich environment. (Baran, Chuang, Thompson, 2010)

Students had fairly high expectations that they would benefit from digital media learning going into these courses, with 68% reporting strong or very strong agreement for expectation of a positive learning experience. At the end of the course, 58% reported that media used in the courses positively affected their learning experience.(Tabor,S W and Minch, R, P 2013)

2.   Method
In Research Research and Development using the method of observation, interviews and documentation

2.1 Evaluation and Revision Model
Early trials (small classes), audio- visual learning model field project program-based SEL evaluated by a friend of one class and observer.

The focus of the evaluation include : 1) content, 2) instructional design. Revised product / the main program. This revision will be conducted in accordance with the input or correction of the evaluation results.

2.2 R & D Developed Model
Model studies Research and Development Borg and Gall in 1998. There are three stages: introduction, development and implementation. Regional development in the research of R & D (Research and Development) is one area that has several stages in the planning process of a product.

The term R&D work (research and development work) indicates that there are at least two processes that occur at the same time; practice both explored and developed (Postholm & Moen 2011).

According to Clarence Schauer defining an instructional development planning is common sense to identify learning problems and seek solution by using a plan for the implementation, evaluation, testing, feedback, and the result.(Suparman 2011)

In the area of research and development are complex relationship between the use of technology and theory that encourages both the design of the message and its learning strategy. Seels & Richey, that regional development can be explained by the presence of: a) message that is driven by the contents ; b) learning strategy that is driven by the theory ; c) the physical manifestations of technology hardware, software, and learning materials. (Seels 2000)

Regional development in technology education rooted in media production and can be organized into four categories: (Seels 2000)

(1) The development of printing technology (2) audio- visual technology is a way of producing and delivering the material using mechanical equipment and electronic messages to present audio and visual. (3) Development of computer-based technology means producing and delivering materials by using a device that originates in the microprocessor. (4) Integrated Development of integrated technology is a way to produce and

deliver materials by combining several types of computer-controlled media.

Research and development is a systematic effort to make or create a program or system that is expected to achieve the learning objectives and the end result of a process of developing a product.

2.3 Development of Teaching Ability

The ability to analyze the curriculum, determining the theme of learning, formulate conformity between the standards of competence and basic capabilities and indicators and learning target to select and organize the material, determine methods or learning strategies, learning resources / media / props learning, preparing the assessment, classroom management, to allocate time, designing lesson plans, designing instructional materials and conduct peer teaching.

That is, it can't replace the teacher because it can only teach things which is recorded on, and this makes the learning foreign language attractive. It is certain that the teacher's as effective as the video film in teaching through video, because he is the only person who enables learners to comprehend what they watch and hear by using some of the communicative techniques. The teacher can be a controller, an assessor on organiser, a prompter and a participant as well. (ÇAKIR 2006)

Microteaching is practicing and applying the appropriate teaching skills. In this unit there are four microteaching lesson that is expected to help implement and refine the capabilities and attributes of the professional educators. Microteaching implemented in phases : The first focuse on how well you convey the attributes that professionals about effective teachers, planning, use, and evaluate the lessons in question within a lesson is short and brief, provide clear instructions to the students to ideas or concepts in a way that can be easily understood by them.

Reflective teaching in practice to make more prudent implementation Teaching is an experience that condition with happines, shock, frustration and pleasure. The use of reflective subjects each contain a reflective teaching objectives, the resources you need to find a target and a description of how to measure student learning and satisfaction. "A teacher is person change with the responbility of helping other to learn and to behave in diffrent ways" That's why teachers are professional jobs that require special skills results of the educational process conducted by teacher colleges

Table 1. Instrument Evaluation Practices Peer Teaching Learning

No	Criteria		Based on
1	Phase Pre Instructional	a.	Asking the student presence (absence).
		b.	Asking earlier material (appersepsi).
		c.	Giving students the opportunity to ask about the subject matter that has not been mastered.
		d.	Repeat the material that was previously.
2	Phase Instructional	a.	Explaining the purpose of teaching to be achieved by students.
		b.	Explain the subject matter to be discussed.
		c.	Discussing the subject that has been written.
		d.	Give concrete examples, questions, tasks on each subject material covered.
		e.	Using tools (media) instruction to clarify the discussion on any subject matter.
		f.	Summing up the results of the discussion of all the subject matter.
3.	Evaluation and follow-up Phase	a.	Asking questions about all aspects of the subject matter covered.
		b.	Repeating a lesson that can not be answered.
		c.	Giving assignment (PR) to enrich the knowledge.
		d.	Notice that the subject will be discussed in the next lesson.

Source : Instruments Research Subjects CPT by Nana Sudjana in Suryosubroto (2002 : 36-37)

Stage Learning Process in higher education includes learning that occurs in a person who is learning progresses through six stages, namely : (1) motivation, (2) attention to the lesson, (3) accept and remember, (4) reproduction, (5) generalization, and (6) carry out the task of learning and feedback. Suprijanto (2005:40)

Learning for students already lead to adults learner. Characteristics of learning that distinguishes between student learning and the student can be considered from the characteristics of adult learners among others : (1) allow the emergence of exchange of opinions, demands, and values , (2) allowing occur mutual communication, (3) learning environment expected the atmosphere that's fun and challenging, (4) prioritize the role of learners, (5) adults will learn if his opinion is respected, (6) of adult learning is unique, (7) the need for mutual trust between the mentor and the learner, (8) adults generally have different opinions, (9) adults have intelligence that is diverse, (10) the possibility of a variety of learning styles, (11) adults learn to know the pros and cons, (12) the orientation of adult learning centered on life real, and (13) the motivation comes from himself.

Direct Instruction is knowledge about how someone did something. The method used in this model is the more dominant FAQ methods, methods Lectures, and others. This model should be packed involve

multidirectional interaction.

Problem Based Instruction is a method taught by the fact that the developing or under the existing problems would follow the discussion and problem solving.

3. Result

Theoretical studies on model CPT Audio-Visual

PKM Learning Approach, basically a type of learning management and development conducted on the above learning. opinian component is essentially how to manage and develop a learning component in a design that is planned by watching the actual condition of the supporting elements in the implementation of learning to be done

Table 2. Standard Design of Model Competence Practice Teaching (CPT) used Audio Visual

No	Study Materials	Needed
1.	Development of observation instruments to school with special needs	Literatur
2.	Development of observation instruments to school with special needs	Literatur& Observation
3.	Development of raw instrument	Literatur & Observation
4	Observations to special needs schools	Observation
5	Implementation of appropriate observation and interview studies, assess appropriate case studies, discussions preparatory teaching practice with the team of researchers.	Observation
6	Learning model development CPT (conceptually)	Literatur review
7.	Evaluation Lecture of CPT	Instrument Evaluation

Teaching Children with Special Needs

Specific learning disability doesn't include learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage. (Grünke & Cavendish 2016)

Teaching children with special needs are closely related to the assessment or monitoring before determining the appropriate learning for the child. Every child with special needs have different characteristics even though they have similar shortcomings. Learning disabilities result from impairments in one or more processes related to perceiving, thinking, remembering or learning. These include, but are not limited to:

language processing; phonological processing; visual spatial processing; processing speed; memory and attention; and executive functions (e.g. planning and decisionmaking). (Calder 2016)

For success, individuals with learning disabilities require early identification and timely specialized assessments and interventions involving home, school, community and workplace settings. The interventions need to be appropriate for each individual's learning disability subtype and, at a minimum, include the provision of: specific skill instruction, accommodations, compensatory strategies; and, self-advocacy skills.

Official definition of learning disabilities. (Adopted by the Learning Disabilities Association of Canada January 30, 2002, and Re-Endorsed on March 2, 2015. **(**Calder 2016)

4. Discusscion

4.1 Prosedure Use of Audio Visual Media

Any software, or collection of software components, that authors can use to create or modify multimedia content for use by other people, is a multimedia authoring tools Sethi, 2005 (Babiker 2015).

Audio-visual media that contain messages in auditory form that can stimulate the mind, feelings, concerns, and the ability of students to study teaching materials.

The declared video outcome categories are divided into two styles; the outcomes that can be described in terms of specific learning objectives and the outcomes achievable with video usage that address (Winslett 2014)

Audio-visual media is the media used to help with not only listened but can be seen visually. Students interested and motivated to learn the material more. The audio visual media is the media contain messages in auditory form that can only be heard and be able to create for the listener 's imagination. Media that projected can be still images (still pictures) and moving images (motion picture) can provide a snapshot of every activity that were photographed.

The images were meant to be eye-catching; the sight of students socially engaged serves both an emotive and pragmatic function. The images were coloured, centrally framed and designed to enhance inspiration and dedication to the website. Films and pods were also available through links on the website, representing academic work in other modes (moving images and speech) (Åberg, Ståhle, Engdahl, Knutes-Nyqvist 2016).

4.2 Learning Audio visual as a Self Reflection

In the process of learning to improve themselves in the practice of CPT then later aired video footage to be evaluated friend of one class of each learner, then they watched their videos back Competence Practice Teaching (CPT) after that they did Self Reflection to correct deficiencies in peer teaching

Table 3 Design Development Model CPT Audio Visual Large Classes

No	Stage	Instrumen	Needed
1.	analysis Introduction		
	PKM module created for the implementation of this learning activity during conventional means in learning activities is still common, the lack of media support learning. It required a learning innovation with the help of audio-visual media and the need for self-reflection to assess the participants' ability CPT	analysis Introduction	Empirical Database, Library Database
2.	Discussion Competence Practice Teaching (CPT)		
	At the beginning of learning activity of CPT needed introduction / CPT discussion of learning materials, and manufacture of instrument observations, interviews, assessment, and assessment / evaluation	Instrument of Teaching Learning	CPT participants Field Observations
3.	Competence Practice Teaching practice		
	Peer teaching practice with the camera recorded	Instrument Evaluation Lecturer	Audio Visual Media
4.	Evaluation at Class		
	Video recordings peer teaching practices rotated and displayed for evaluation and improvement, then the results of the final evaluation obtain satisfactory value	Video - capture procedures	Audio Visual Media
5.	The Observer		
	Observer team composed of 2 experts in accordance with the study of duty to observe and assess	Instrument Evaluation	Audio Visual Media
6.	Self Reflection		
	Video footage taken of each learner, then they watched the video again at home	Reflection	Audio Visual Media
7.	Modul		
	1. Chapter 1. Teacher Professionalism Disabilities School 2. Chapter 2. Ability to Teach Teachers Disabilities School 3. Chapter 3. Teaching Skills Teachers Disabilities School 4. Chapter 4. Development of audio visual needed Competence Practice Teaching	Design Modul	Competence Competence Competence Audio Visual

4.3 The Process of Develop Model of Competence Practice Teaching

Analysis Introduction process of develop model Competence Practice Teaching CPT module created for the implementation of this learning activity during conventional means in learning activities is still common, the lack of media support learning. It required a learning innovation with the help of audio-visual media and the need for self-reflection to assess the participants' ability Competence Practice Teaching.

Discussion Competence Practice Teaching at the beginning of learning activity of CPT needed introduction / CPT discussion of learning materials, and manufacture of instrument observations, interviews, assessment, and assessment / evaluation

PKM practice: Peer teaching practice with the camera recorded, using hidden action cam

Evaluation at class: Video recordings peer teaching practices rotated and displayed for evaluation and improvement, then the results of the final evaluation obtain satisfactory value

The Observer : Observer have a team composed of 2 experts in accordance with the study of duty to observe and assess

Self Reflection: Video footage taken of each learner, then they watched the video again at home
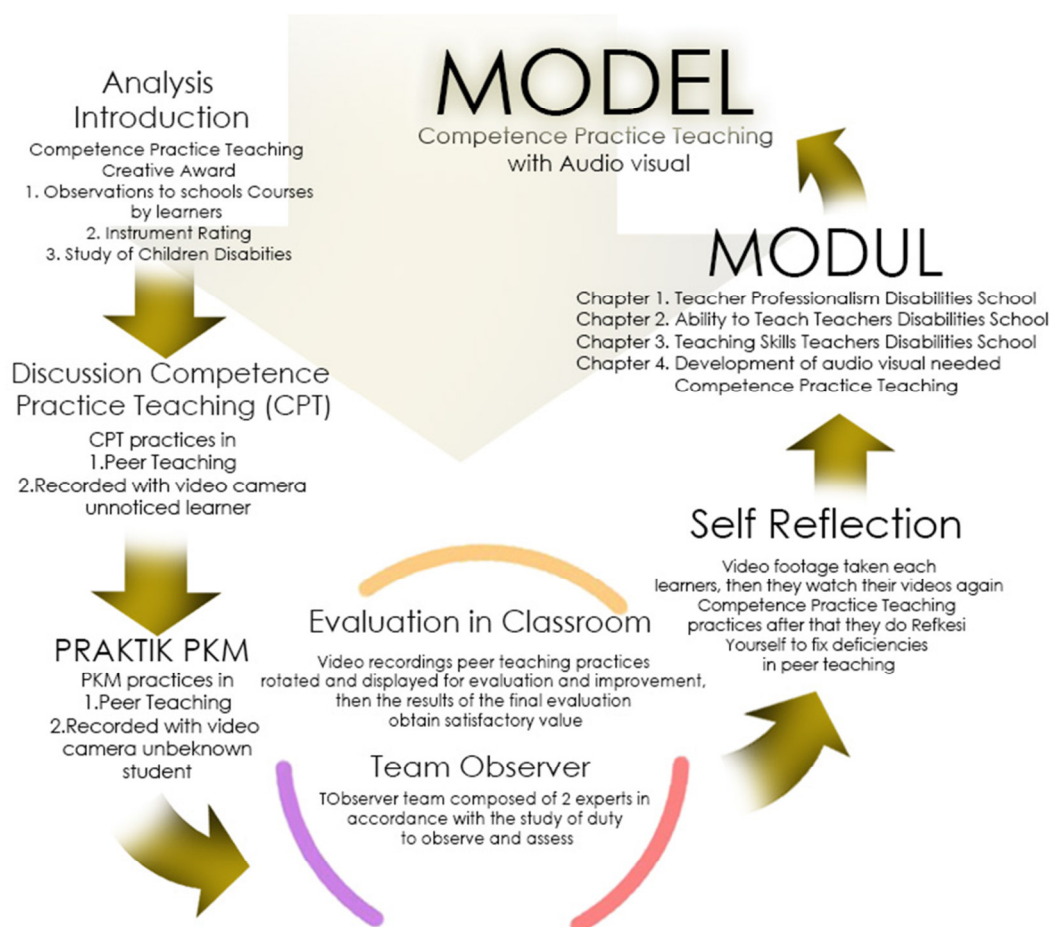
Figure 1. Development model of Competence Practice Teaching

4.4 Contents of the module

First phase: Analysis Introduction : PKM module created for the implementation of this learning activity during conventional means in learning activities is still common, the lack of media support learning. It required a learning innovation with the help of audio-visual media and the need for self-reflection to assess the participants' ability PKM

Second Phase: Discussion PKM: At the beginning of learning activity of PKM needed introduction / PKM discussion of learning materials, and manufacture of instrument observations, interviews, assessment, and assessment / evaluation

Trird phase: PKM practice : Peer teaching practice with the camera recorded

Fourth Phase: Evaluation at class : Video recordings peer teaching practices rotated and displayed for evaluation and improvement, then the results of the final evaluation obtain satisfactory value

Five Phase: The Observer : Observer team composed of 2 experts in accordance with the study of duty to observe and assess

Six Phase : Self Reflection. Video footage taken of each learner, then they watched the video again at home.

Seven Phase : Modul with 4 chapter inside. Chapter 1. Teacher Professionalism SLB, Chapter 2. Ability to Teach Teachers SLB, Chapter 3. Teaching Skills Teachers SLB, Chapter 4. Development of audio visual needed PKM.

5.   Conclusion

Based on the research that the development of teaching competence coaching model using media Audio Visual conceptually formulated and available used. Preliminary results showed that the competence to teach students using the conventional PKM module is still low, especially in the ability to assess (assessment). Furthermore, the study continued to make a coaching module teaching competencies based on Audio Visual. The results of this study suggested: (1) Learning PKM using audio-visual media to allow students to identify the weaknesses and strengths, (2) In the practice of teaching and can improve. Develop learning modules Teaching Competency

Development (CPT).

References

Postholm, M., & Moen, T. (2011). Communities of development: A new model for R&D work. *Journal of Educational Change*, *12*(4), 385-401. doi:10.1007/s10833-010-9150-x

ÇAKIR,I (2006) *The Use Of Video As An Audio-Visual Material In Foreign Language Teaching Classroom. Journal Of Distance Education (TOJDE)* October 5 (4) Article 9 (67-72)

Babiker,M. A. B., (2015) *For Effective Use of Multimedia in Education, Teachers Must Develop their Own Educational Multimedia Applications*, *Journal Of Distance Education (TOJDE)*, *October 14*(4),62-68

Åberg, E.S., Ståhle, Y., Engdahl,I., Knutes-Nyqvist, H. (2016) *Designing a Website to Support Students' Academic Writing Process, Journal Of Distance Education (TOJDE)* January, 15(1), 33-42

Tabor, S. W., & Minch, R. P. (2013). Student Adoption & Development of Digital Learning Media: Action Research and Recommended Practices. *Journal of Information Technology Education*, *12*203-223.

Winslett, G. (2014). What counts as educational video?: Working toward best practice alignment between video production approaches and outcomes. *Australasian Journal of Educational Technology*, *30*(5), 487-502.

Astra, I. M., Nasbey, H., & Nugraha, A. (2015). Development of an Android Application in the Form of a Simulation Lab as Learning Media for Senior High School Students. *Eurasia Journal Of Mathematics, Science & Technology Education*, *11*(5), 1081-1088. doi:10.12973/eurasia.2015.1376a

Calder Stegemann, K. (2016). Learning Disabilities in Canada. *Learning Disabilities -- A Contemporary Journal*, *14*(1), 53-62.

Grünke, M., & Morrison Cavendish, W. (2016). Learning Disabilities around the Globe: Making Sense of the Heterogeneity of the Different Viewpoints. *Learning Disabilities -- A Contemporary Journal*, *14*(1), 1-8.

Seels, Barbara B. dan Rita C Richey, *Teknologi Pembelajaran*, *Definisi dan Kawasannya*, Terjemahan Dewi S.Prawiradilaga, Raphae, Jakarta: UNJ, 2000

Suprijanto, *Pendidikan Orang Dewasa "Dari Teori Hingga Aplikasi"*, Jakarta: Penerbit Bumi Aksara, 2005.

Iqbal, M. Hasan. *Pokok-Pokok Materi Metodologi Penelitian dan Aplikasinya*. Penerbit Ghalia Indonesia : Jakarta, 2002

Tri Sediyani (M'82-SM'80-F'82) Born in Lamongan 8 february 1955, the Graduate Program Department of Education at the Jakarta State University in 1979, then went on Master Programs Early Childhood Education in the Graduate Program, State University of Jakarta in 2010. Lecturer Department of Special Education, State University of Jakarta the post of Associate Professor. Began teaching at the University since 1980 until now is active as Chairman of the Special Education Laboratory in collaboration with the Hospital that is handling the development of the child.

Yufiarti, **(M'96-SM'86-F'96)** Born in Jakarta on February 17, 1964, 1991 completed the Master of Education Educational Psychology later in 1996 Education Doctorate of Education at the Jakarta State University and earn a degree in the field of Educational Psychology Professor, State University of Jakarta. Currently a lecturer at the Graduate Program Study Program Early Childhood Education, in addition to actively teaching active also in the field of education and in the Association of Educational Psychology

Eko Hadi Prayitno (M'2011-SM'2014-F'2012) Born in Jakarta, October 16, 1981, Completed undergraduate program majoring in Fine Arts Education in 2006 and then went on the Master program in Educational Technology Department, State University of Jakarta in 2011, and the current members of the Association of Indonesian Education Technology Expert. Multimedia active as a lecturer in the Department of Information Technology at the Polytechnic LP3I Jakarta. Some community service activities conducted to enhance the professionalism as a teacher.