THE LOW COMPETENCY OF EARLY CHILDHOOD EDUCATION TEACHERS INFLUENCES PROFESSIONAL DUTIES

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Abstract. The teacher is the determinant in the success of the learning process; it requires teachers who have professional Information Technology (IT) competence. In reality, many teachers have low IT competence. This study aims to determine IT competence for Early Childhood Education teachers in Bekasi, West Java. This research used the Survey Method. The techniques used in data collection are questionnaires and interviews—questionnaire in the form of ten questions that must be filled by respondents. The respondents in this study were 50 Early Childhood Education teachers taken by random sampling. The results of this study show the IT Competence of Early Childhood Education Teachers in Bekasi City is still low, and the need for the policies of certain parties to require Early Childhood Education teachers must have IT competence. Policies that require Early Childhood Education teachers to have comprehensive IT competencies need to be supported by regular monitoring and evaluation to ensure the effectiveness of the IT devices as media in the latest integrated technology learning. The teachers did competence due to the application of IT equipment in Early Childhood Education. They can be in line and contribute positively to the development of children's cognition, psychomotor, and practical. Moreover, Early Childhood Education is the initial phase of a child's formal education.

Keywords: teacher; early childhood education; professional; competency; information technology

I. INTRODUCTION

The duties and responsibilities of Early Childhood Education teachers are not easy tasks. For this reason, the teachers must have professional competence as a provision in the learning process. According to **[1]**, the teacher has duties, roles, competencies, and responsibilities towards their students hierarchically. In the 4.0 digital era and the Industrial Revolution, for Early Childhood Education teachers are even more burdensome because they have to be competent to the situations and conditions. ICT competence is the mastery competency of Information and Communication Technology (ICT). According to **[2]**, ICT competencies of the teacher are the ability to develop learning innovations by utilizing ICT in both aspects of pedagogical, personal, professional, and social competencies. IT competence is not only needed for administrative tasks such as making reports (report cards) to parents, making attendance lists of students but also developing the creative and innovative learning media, carrying out the material to children, looking for various sources of materials or materials needed for the development of teaching materials, and other functions. Teachers and Lecturers Law Number 14 of 2005 Chapter IV, article 8, explained in article 10 that teachers are required to have pedagogical competence, personal competence, social competence, and professional competence **[3]**.

Based on the results of **[4]**, the implementation of ICT in increasing the competence of Early Childhood Education teachers through the Knowledge Management System in order to explore the difficulties faced by Early Childhood Education teachers in developing competencies, primarily pedagogical and professional competencies, is carried out treatment to be improved through empowerment Information and Communication Technology (ICT). In reality, many Early Childhood Education teachers do not have IT competence yet in supporting their profession. These mastery competencies both in the form of Microsoft office and in the development of other competencies based on IT. **[5]** said that in reality, the ability of teachers only mastered the ability of standard Microsoft office.

This study aims to analyze and get information about the low IT skills of Early Childhood Education teachers based on existing problems. The results of this study expected to be the basis for recommendations to authorized parties such as government agencies, Early Childhood Education Institutions, and other related institutions. These institutions are related to improving the teacher by holding training, seminars, and workshops on improving IT competence for Early Childhood Education Teachers and regulations regarding the importance of IT Competence for Early Childhood Education Teachers.

Competency interpreted as ability, skill, and authority **[6]**. Especially now in the digital era and in the era of the Industrial Revolution 4.0, teachers must have relevant competencies so that they can survive as teachers professionally. For this reason, teachers must always improve competency qualifications such as IT competence and mastery of linguistic literacy to develop networks and

insights, knowledge or information, and have better, smarter, and more logical reasoning or logical abilities. Competence is a combination of knowledge, skills, values, and attitudes reflected in the habits of thinking and acting **[7]**. For this reason, an Early Childhood Education teacher must have a holistic and comprehensive competency. According to **[8]**, there are Early Childhood Education teacher qualification standards, namely: 1). Pedagogic competence that is related to the management of learning, 2). Personality competence is the ability related to personal includes a strong personality, noble character, wise, and authoritative as an example for the students; 3). Procession skills are abilities related to the mastery of subject matter widely and in-depth, 4). Social competence includes the ability to interact with others, including communicating effectively and efficiently with students, fellow teachers, parents/guardians of students, and surrounding communities. At this time, the most intense and demanding teachers' ability to master information and communication technology, and the practice of learning in educational institutions are reflecting real-time, specifically the Early Childhood Education Institute.

IT competencies include administrative abilities used in supporting Early Childhood Education teachers to carry out their professions, such as designing innovative teaching materials, making evaluation reports, reports on attendance, and other tasks. The ability to exploit a wider variety of learning resources also needed with electronic networks such as computers and the internet. IT competency that must be possessed by Early Childhood Education teachers today is an ability in which a teacher must be able to use computers and internet networks properly, correctly, and wisely when doing the learning. Reasons for an Early Childhood Education teacher must have IT competence in early childhood learning include: 1) Rapid development of information technology and its use for human life; 2) The need for the introduction of computers in early childhood; 3) Preparing children for the future of the information technology era; 4) Efforts needed for children to dare to use computer technology **[9].**

II. RESEARCH METHODS

Research Conceptualization

This research type was a survey that used descriptive-analytical methods. A descriptive survey method is a method that uses a sample of the population using a questionnaire as a data collection tool. Survey research is an investigation to obtain facts from phenomena that exist and look for facts factually, both about the social, economic, or political situation of a group or an area **[10]**. According to Karlinger **[11]**. "Survey research is research that can be done in large populations and small populations, but the data studied are from samples taken from these populations". The object in this research is Information and Communication Technology Competence (ICT) on Early Childhood Education teachers. This research conducted in September-December 2019 in the Bekasi City Region of West Java. This research was limited to the assessment and analysis of the low competence of Early Childhood Education teachers about IT as a medium in

modern learning and revitalization of IT competencies in supporting contemporary learning for Early Childhood Education.

Research Subject

The study subjects were 50 Early Childhood Education teachers in Bekasi City, Region of West Java. In this study used a sample of 50 Early Childhood Education teachers whose background was not a bachelor degree or Psychology or Counseling in accordance with the requirements of the Teacher and Lecturer Law No. 14 of 2005, because there were many Early Childhood Education teachers did not not have Early Childhood Education bachelor degree Qualifications even high school graduates or equivalent. The selection of 50 Early Childhood Education teachers as research respondents was because they did not meet the qualifications required in the Teacher and Lecturer Law.

Data Analysis and Interpretation

In this study used a survey methods. The main data and information sources were obtained from respondents as samples. The data collection instrument used a questionnaire. Questionnaires are questions that filled out by respondents. There were 10 questions that must be filled by respondents. Samples obtained were then analyzed, then draw the conclusions. This research is limited and focused on the description of IT competencies possessed by Early Childhood Education teachers in the Bekasi City Region of West Java and the results obtained through research conducted

III. RESULTS AND DISCUSSION

A. Results

The following research results are based on the IT competence of Early Childhood Education teachers in the Bekasi City Region of West Java.

Table 1. Respondent Characteristic

Age	Total Respondent	Level of Education	Teaching Experience
25-30 year	5	High School / equal	2 – 5 year
30-35 year	20	Non Early Childhood Education Bachelor Degree	5 - 7 year
35-40 year	25	High School / Equal	7 and more

Early Childhood Education teachers needed to have IT Competence Regulation

There is a need for policies or regulations for Early Childhood Education teachers to have IT competencies. If the government or managers of educational foundations, especially early childhood education, make compulsory IT competency requirements for Early Childhood Education teachers, it will encourage and motivate prospective Early Childhood Education teachers to master the IT competency. The results of the data processing through the questionnaire given resulted in 66% believe that they agreed with the Early Childhood Education teacher regulation that IT

competencies must they possess. Meanwhile, 34% of teachers said that this was not necessary.
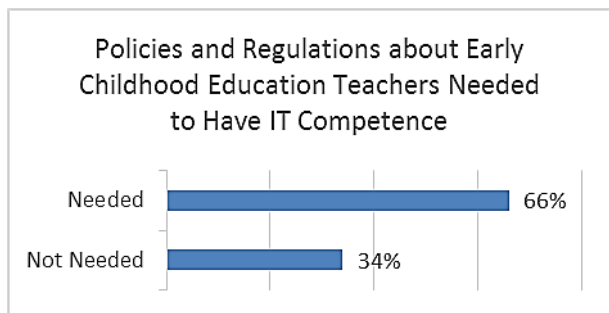

Figure 1. Policies and Regulations about Early Childhood Education Teachers Needed to Have IT Competence

The Need to Use Computers in Teacher Professions

Based on the results of data processing through the questionnaire sheet, it can be produced that in Figure 2, 60% of respondents stated that they did not need yet to use a computer for carrying out the teaching profession of Early Childhood Education. This is certainly very ironic with the current digital era. Almost all work activities are now based on computers as a professional tool. However, there were more teachers in the field who use manual systems (paper and pen).
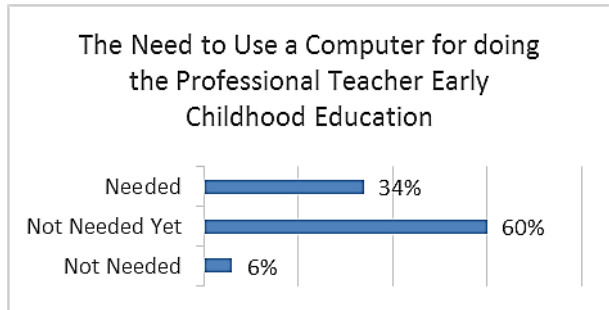

Figure 2. The Need to Use a Computer in doing the Professional Teacher Early Childhood Education

Mastery of IT Supporting the completion of Early Hood Education Teacher Professional Tasks

This study showed that there were 50% of Early Childhood Education teachers in Bekasi City who had not mastered IT as Early Childhood Education professional supporting facilities. This result showed that the respondent did not understand computer usage well. The task of the Early Childhood Education teacher who took care of all the problems in Early Childhood Education from the registration issue, accepted student savings, designed learning processes, determined the media and other tasks were all the responsibilities of Early Childhood Education teachers. Unfortunately, there were many Early Childhood Education teachers who had not mastered ICT properly as a professional supporting facilities.
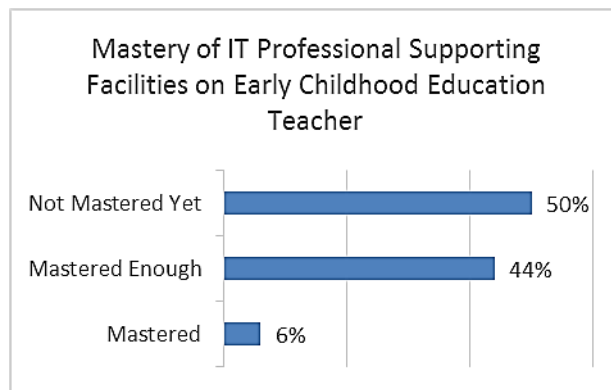

Figure 3. IT Mastery as a Teacher Professional Supporting Facilities

The IT Courses participation in Improving The Competency Qualifications of Early Childhood Education Teachers

From the data analysis, there were 80% Early Childhood Education teachers who have never taken an IT course. This can be predicted because the requirements to become an Early Childhood Education teacher do not use special requirements to have IT competence. Indicators of non-participation in increasing IT competency through courses other than regulation can be indicated as not interested yet; do not have the budget for the course, the time, and opportunity needed for training courses and others.
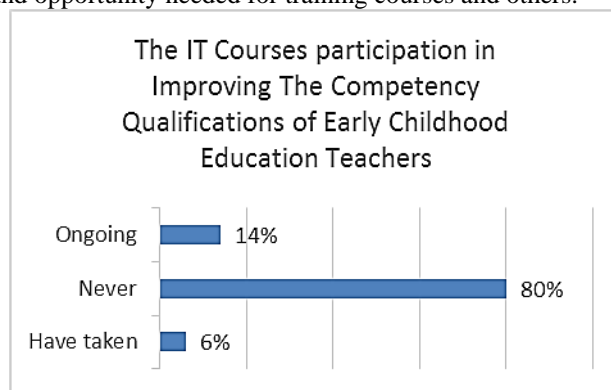

Figure 4. The IT Courses participation in Improving The Competency Qualifications of Early Childhood Education Teachers

The importance of mastering IT in the Digital Era

All the respondents (100%) were agree that the digital era of Early Childhood Education teachers need IT mastery in carrying out their profession such as administrative tasks, developing teaching materials, developing or obtaining information on various knowledge, experiences, and other abilities such as translating English into Indonesian because a lot of information currently uses the language other than Indonesian.
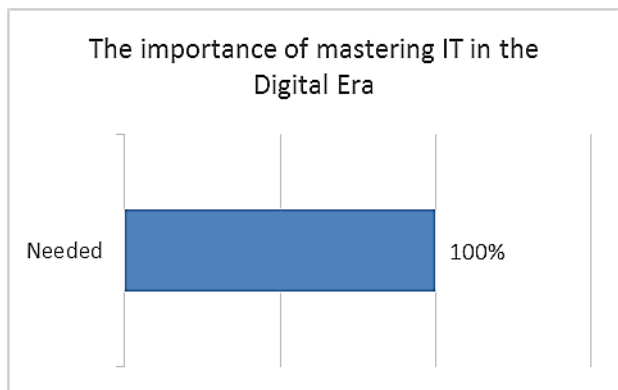
Figure 5. The importance of mastering IT in the Digital Era

The Importance of Early Childhood Give the Opportunities for Mastering Basic IT

There were 96% of Early Childhood Education teachers stated it was important that early childhood children now need to be given IT learning opportunities. The reason is because children do live in the digital era. In accordance with the study of Vigotsky theory, children's development is strongly influenced by the environment, educators also need to provide opportunities for children in accordance with the development of the times and existing environmental conditions. For those who answered that they did not need as much as 4% because they were too worried about the children being negatively affected by the development of IT.
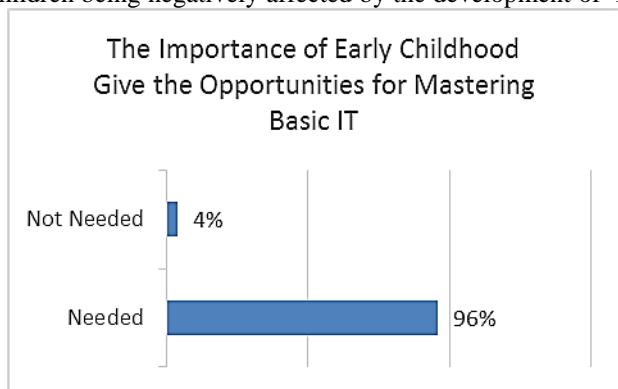

Figure 6. The Importance of Early Childhood Give the Opportunities for Mastering Basic IT

Mastery of Microsoft Office by Early Childhood Education Teachers

In this case, there were 62% picked the Microsoft office competencies that Early Childhood Education teachers want to master in Bekasi City. This result was more than wanted to mastery the Microsoft word and power points, and rare than those who wanted to master Microsoft Exel. Whereas in the implementation as an Early Childhood Education teacher, one of the tasks is to make the financial reports, child savings and others. But in the daily reality of this financial reporting teachers are still using a manual paper system with pens and rulers. This manual financial reporting activity is actually very risky because there will be

many shortcomings and errors such as errors in relationships, forgetting not to write down and not well documented,
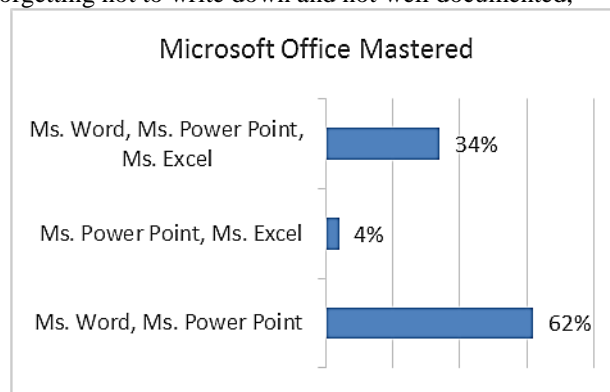

Figure 7. Microsoft Office Mastered

Types of IT Training to be Mastered

There were 52% of respondents more interested to IT training and making animated videos for children than development of teaching materials training. This was because the respondents (Early Childhood Education teachers) wanted to have a study time and play while learning. Mastering the steps on how to make animated videos will make the Early Childhood Education teacher create an attraction for the child to play it. The teacher's perception on teaching materials was more like the difficult and complicated process of teaching materials development. But the video animation was considered a lighter activity in its making more interesting.
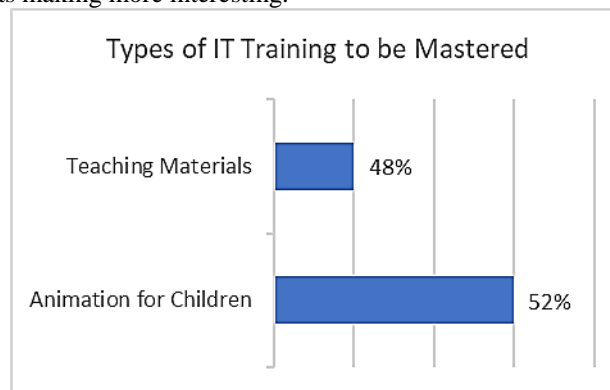

Figure 8. Types of IT Training to be Mastered

Types of IT Offerings to be Mastered

There were 58% of respondents answered the Early Childhood Education teachers wanted to master the presentation of IT in making Animated Video Media more than master the IT preparation to carried out administrative tasks or games.
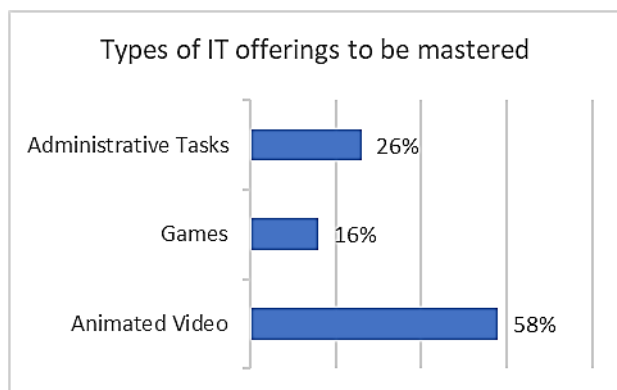
Figure 9. Types of IT offerings to be mastered

Ability to Install Video Animation Editor

There were 54% of teachers who did not have the ability to the installation, and 26% of these doubts to do so. This result showed that the teachers need a special training program to install animated video and editor activities. This was due to the teachers rarely even do or take part in this training activity. As for those who answered that they could install an animated video, they were also not able to did an editor or further steps in making the animated video.
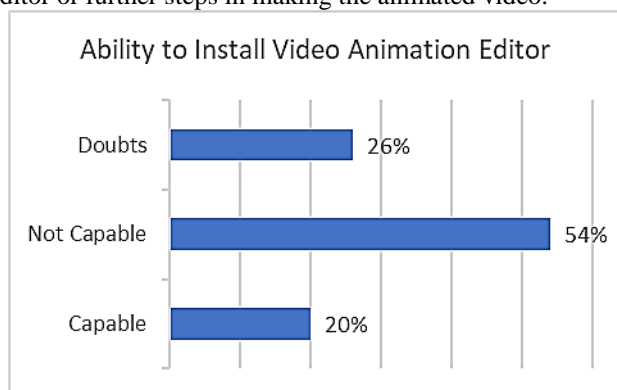

Figure 10. Ability to Install Video Animation Editor

B. Discussion

The Urgency of IT Competence for Early Childhood Education Teachers

In today's digital era, Early Childhood Education teachers must master ICT in order to support their professional tasks. According to the American Association of Teacher Education (AACTE), teachers in the 21st century should be able to do and achieve several things. One of them can combining technology with the pedagogic and subject matter and can develop creativity in using technology by the curriculum and the demands of the required lessons. For this reason, it is necessary to have a policy or regulation related to the requirement that Early Childhood Education teachers and teacher candidates must have IT competence as one of the requirements. This competence will encourage and motivate teachers and prospective of Early Childhood Education teachers trying to master IT. This result is in line

with the statement of **[12]** that the introduction and learning of Information Technology based for Kindergarten Teachers (Early Childhood Education) can anticipate progress in the information age that is starting to implement in the education field. This implementation of all types and levels of education is no exception to Early Childhood Education.

With IT competence possessed by Early Childhood Education Teachers, it will significantly support the tasks of his profession. According to **[13]**, improve the quality of education resolved the challenge of the low ability of teachers to use ICT. According to this statement, there needs to be an immediate regulation or policy of the government or Early Childhood Education institutions. This regulation has to contain the Early Childhood Education teachers have IT competence so that they will motivate prospective Early Childhood Education teachers to learn and master IT.

IT Competencies Held by Early Childhood Education Teachers

Many IT Competencies that must be owned by Early Childhood Education teachers. Many activities were still manual such as making learning plans, financial reports, developing teaching materials, recording children's savings reports, carried out the learning process and others, which changed to the digital-based. It is time for institutions and teachers to master their computers and devices well because they will affect the results of the learning process. According to Chandra and Loyd **[13]**, said that learning that utilizes ICT optimally would be able to improve student achievement. Some IT competencies that must be possessed by an Early Childhood Education teacher include Microsoft Office, Video Media Animation Editor Installation Ability and other applications. Although there are still that many teachers who have not mastered this competency, this is in line with the results of **[14]** that in order to renew learning media is hampered by the teacher's inability to use ICT-based learning media as a way of delivering material.

In addition to the teacher mastering Microsoft Word and PowerPoint in developing materials or teaching materials, the teacher must also master Microsoft Exel well because they also need this. According to **[9]**, the Microsoft excel program is an application used for the calculation of financial data and other data (spreadsheets) ranging from simple to complex tasks. A teacher who is mastering Microsoft Excel will be beneficial in carrying out tasks in a variety of financial reports not only save money but registration money, monthly reports and other tasks. Because Early Childhood Education teachers usually handle all this work.

The Importance of IT Training to Support IT Competence in Early Childhood Education Teachers

At this time, they were strengthening needs for teachers to gain insights about IT. According to **[9]**, in the development of computer technology time, teachers and educators need to prepare students to recognize the use of computer technology. They also need to the introduction of computer technology from an early age will encourage

children to dare to use it, in the future they will be better able to master the technology needed to support the completion of tasks and work. This competence is as an emphasis that teachers must develop themselves to master IT by attending various training and workshops. The participation of IT courses in order to improve the competency qualifications. According to **[15]**, there are still many teachers who had not the opportunity to attend training to improve their competencies and abilities in the use of ICT. For this reason, it is time for teachers to take intensive and ongoing training with a variety of diverse skills related to IT competencies.

According to Warsuhna **[15]**, there are four levels of ICT competencies for teachers. There are 1). The basics of ICT master (ICT Literacy). 2). Explore knowledge (acquisition and engineering of knowledge) through ICT, 3). The ability to create knowledge with ICT, 4). Share the knowledge by using ICT, both to students and other teachers. One substantial program that must master today is making IT-based learning innovations that are interesting and fun for children. Under the principle of playing while learning for early childhood is a video animation presentation in order to improve various aspects of development in children, including cognitive, language, moral-religious, social-emotional, physical-motor and art aspects. It is also necessary to have training in making guidelines for the use of computer technology efficiently and practically to support it.

IT competence as a prerequisite in the implementation of modern learning is not easy to do now and certainly requires careful study, evaluation and policy. The modernization of learning can not avoid the circumstances through IT tools changes some parts of the traditional learning culture in which there are some elements of value that are instilled and contributed to students consciously or unconsciously and both directly and indirectly. Of course, habituation, monitoring, and evaluation are three things that used as a step of consideration in involving IT as a medium of contemporary learning, especially at the level of Early Childhood Education which is the forerunner and beginning of a child's formal education.

IV. CONCLUSION

From the research conducted, mastery of IT competence in Early Childhood Education teachers in the Bekasi City Area of 50 respondents obtained the conclusion that the competence of Early Childhood Education teachers on IT skills is still very low. For this reason, they needed IT training in order to support the profession. Also, there need regulations or policies from the government or related institutions to require Early Childhood Education teachers to have IT competencies, because IT competence for Early Childhood Education teachers is absolute in supporting their professional tasks in the digital age. Among the IT competencies that need to be mastered by teachers today are Microsoft Office (Microsoft Word, Microsoft PowerPoint, Microsoft Exel), and Animation Video Media Development.

These competencies aligned with the learning process and procedures undertaken. This research provided recommendations to policymakers in the education sector to continuously improve teacher competencies, especially Early Childhood Education teachers in order to face the development of modern learning models and the recency of challenges for the future interests of the nation's children. The development of IT competence in supporting the professionalism of a teacher in the modern era carried out in stages by considering the context of student needs in the present so that the competencies learned and master are measurable competencies. For further research, hope to provide a concrete form of implementing IT competency development for Early Childhood Education teachers and other children's education.

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