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CALL (Computer Assisted Language Learning) as

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teachers in Indonesia: a Vygotsky's sociocultural

perspective

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Abstract: Teacher professional development in Indonesia has widely expanded in globalization, especially with the existence of technology in instruction. Computer Assisted Language Learning (CALL) resemble one of the means to promote teachers in developing their pedagogic skill in teaching. CALL from sociocultural perspective relates the issue of culture, literacy, and identity. The present study discusses how teaching practices of teachers reflect CALL approach in the eyes of sociocultural perspective, ie. social interaction, internalization, mediation, and psychological systems. 25 English teachers from 15 schools responded intensively in answering the online questionnaire with closed-ended and open-ended questions as well as an unstructured interview about their process of classroom instruction. Focusing on the three aspects, this article seeks to find out the relations of how CALL becomes such a way to promote secondary school teachers in Indonesia to be globalized by using technology in language instruction. Three main aspects of Vygotskian thought is used to analyze how technology-enhanced learning can impact to the EFL instruction: mediation, social learning, and genetic analysis. It turns out that Indonesian EFL secondary schools teachers make use of CALL in such a various but not advanced way due to limited knowledge and skill to the updated current technology making seminars and workshops in advanced CALL are necessary to attend.

Keywords: CALL, Teacher Professional Development, Technology in Language

Learning, Vygotsky's sociocultural theory

The use of information and communication technology (ICT) is unavoidable in

many aspects of human life. Education is an aspect that cannot be separated from the use of technology because its progress is very helpful in learning activities such as radio, tape recorder, film, television, radio and gadget. Innovative learning should be done by teachers in today's digital age, by approaching the use of technology in learning. Technology is an important factor in improving the quality of education and learning by making a lot of information available to the general public (Hismanoglu, 2012). The use of technology in language teaching with technology will have a strong impact on teachers and students. Now this is the reality found in the learning process, few students pay attention to the lesson, while others do not pay attention to the teacher. We cannot fully classify students as passive subjects, but teachers are responsible. Through creativity in methods, props and patterns of interaction, learning activities are not monotonous and boring; this will have a positive impact on the learning process. Learning will not be boring because the form of attraction technology owned by such students.

Beatty (2010, p. 7) defines computer-aided language learning as a process in which learners use computer media that lead to improved language skills. Gamper and Knapp (2002, p. 329) also define CALL as a "research area that explores the use of new computing techniques and new media for language learning and teaching". Computers as media provide a very broad access to the use of teaching materials that can be developed with the computer itself. Variations of teaching materials can be anything connected with computers and the Internet, such as computer-based materials such as eBooks, interactive videos and other computer products, although supported by Internet connectivity.

New rapid technological developments were recently predicted by previous researchers that teachers in education must adapt to all technological refinements. Chapelle (2003, p. 10) concludes that the role of technology experts is highly correlated with the attitude of a teacher or researcher. The potential sophistication of this technology will allow access to technology products in the lifestyle. In this case, the teacher will adjust the way in which the work and professionalism in which it is taught can be changed. Computer Assisted Language Learning (CALL) is a form of learning approach that involves the use of computers and can be supported by Internet network connectivity. This approach is consistent with the development of technology-oriented learning that is made by teachers in the 21st century.

The digital revival of the 21st century was expected through the use of research technology in language teaching, where advances in computer technology continue to continue with other devices currently known as gadgets. Since the 1950s at the beginning of the CALL development so far, there have been many changes that extend coverage on Mobile Assisted CALL Language Learning. The existence of VCD and DVD was replaced by smartphones, which supported a fast Internet connection. For example (Beatty, 2010)

the example of the CALL applications in the era of the 21st century mentions as follows: Web browsing, Transferring e-mails to mobile devices via smartphone, instant messaging app as the default feature of smartphones, Online shopping, Calendar and contact features

that can contain additional data on smart Call, Worksheets through smartphones, Digital photo settings, editing, printing, uploading and printing wireless services as well as publishing on websites.

REVIEW OF THE LITERATURE

Professional development can be one of the most effective means of enhancing the quality of instructional process (Eun, *Making Connections: Grounding Professional Development in the Developmental Theories of Vygotsky*, 2008). To achieve the high standards of education, professional development is also necessarily required as essential mechanism in improving teachers' content knowledge and teaching practices (Creemers, Kyriakides, & Antoniou, 2013). Professional development can also be defined in broader context covering any kinds of learning taken by teachers outside their point of early training,

In relation to teacher professional development, Vygotsky (1978) sought to examine human capital development into four levels: (a) sociocultural domain, focussing on mediation and using different kinds of disciplinary tools appreciated by society; (b) the ontogenetic domain, related to the lifetime individual development; (c) the phylogenetic domain, dealing with understanding of species in evolution-scale change; and (d) the

microgenetic domain, regarding relatively short change from an individual.

Vygotsky's Socio-cultural Theory of development

The sociocultural theory comes from a Russian psychologist, Lev Vygotsky, along with his colleagues which has imposed effects on psychology of education as a whole. One of the important concepts of sociocultural theory is that the human mind is mediated which is organized by cultural artefacts, activities, and concept (Lantolf, Thorne, & Poehner, 2015). The two key points and influential ideas of Vygotsky's SCT are (1) mediation and artefacts, and (2) Genetic Method.

Vygotsky proposed an integrated theory of human mental functioning that began a new way of thinking about development. He recognized that the human mind was embraced the so-called 'lower mental processes', but the distinctive dimension of human consciousness was its capacity for voluntary control over biology through the use of higher-level symbolic artefacts (ie, language, literacy, numeracy, categorization, rationality, logic, etc.) (Lantolf, Thorne, & Poehner, 2015). The artefacts 'include

material tools and symbolic tools (language) and their primary unit is human cognition

(Barak & Maskit, 2017). The theory indicates that the origin of knowledge construction should not be sought in the mind but in the social interaction co-constructed between a more and a less knowledgeable individual (Lantolf, 2008). Moreover, the construction of knowledge is a socioculturally mediated process affected by the physical and psychological tools and artefacts.

Genetic method can be explained as an approach to scientific research proposed by Vygotsky in which the development of individuals, groups and processes are traced over time with the evidence of historical perspective (Lantolf, Thorne, & Poehner, 2015). In the ease of timespan, development surely occurs over the course of months, years, or even the entire lifespan of an individual or group, it may also occur over relatively short periods of time.

Teacher Professional Development Models

Professional development models have been varied depending on the context such as 'collaboration and self-regulation' (Butler, Lauscher, Jarvis-Selinger, & Beckingham, 2004). However, in broader context of literature, Guskey (2000) has elaborated the foremost models of professional development. Despite relatively not new and used for centuries, the models are believed to be widely accepted and valid as a means of professional development, including teachers.

Training, the first model of professional development, can be the most experience that teachers may have to gain their expertise in teaching in their field of study by sharing ideas through group-based activities such as seminars, workshops, demonstrations, simulations, and microteaching. Institutes, courses, and conferences are other traditional forms of professional development that share many of the features of workshops, in that they tend to take place outside of the teacher's school or classroom; and they involve a leader or leaders with special expertise and participants who attend at scheduled times (Garet, Porter, Desimone, Birman, & Yoon, 2001).

Observation/assessment is one of the best means of teachers' professional development, i.e. by observing performance in the class each other. Feedbacks gained from that observation can be a reflection for improving the quality of teaching, Teachers can also analyse the performance and consider the suggestion given by peers. The main focus of the observation may be on lesson design, instructional practices, classroom management, and many others.

Involvement in a development/improvement process such as teachers'

participation on a series of activities in an academic group is necessary. Participation on group discussion such as developing new curriculum, designing a program, planning strategies to improve instruction, or solving a particular problem is likely to increase

teacher's specific knowledge and skills. In addition, they can improve the way how to collaborate with group members or partners and share decision making.

Study groups includes a team at school to find a solution or recommendation for an instructional problem at school. Study groups should be well-formed by involving professional individuals previously trained and supervised on their work. They strengthen the idea of schools as learning communities for students and educators. This is due to in solving the particular problems, there is a tendency that the solutions are based on the members' opinion instead of research results.

Inquiry/action research is another model of professional development with the idea that teachers can take role as researchers on their own classroom to solve students' problem on teaching-learning process. The steps that teachers must include are (1) selecting the problem or question of collective interest, (2) collecting, organizing, and interpreting information related to the problem, (3) consulting the relevant literature and research results, (4) deciding the possible actions, and (5) taking actions followed with document results. It is expected through this model that teachers have ability to formulate valid questions about their own practice and pursue the objectives to address the problems so that teachers become more reflective practitioners, more systematic problem solvers, and more thoughtful decision makers.

In Individually guided activities, teachers are asked to set up their needs of professional development in the future, and write the possible actions to achieve the goals. It is a kind of self-analysis with the assumption that teachers can judge their own needs and learning and have self-direction and self-learning. One advantage of individually guided activities is that there is flexibility and the opportunities they offer for choice and individualisation. Guskey mentions that the strategies for individually guided activities that teachers may use include personal histories, video/audio self —assessment, journal writing, cognitive coaching, cases, roleplaying, and portfolios.

Mentoring is one model in which a less experienced teacher is accompanied by a very experienced teacher with the hope that the discussion or mentorship can yield sharing of ideas effective practice, reflection on current methods, on-the job observations, and strategies for improvement. This is considered effective because the highly successful colleague can share his/her experiences and ideas to motivate and provide assistance to the junior' in dealing with professional development. Not just for one side to be benefited, mentoring is benefited for both individuals; the highly experienced one can conduct

lifelong learning and highly productive professional relationship.

Connections between Vygotsky's SCT and Teacher Professional Development Models

The essence of Vygotsky's SCT attempts to comprise the processes in which

'learning and development' happens and 'social interaction' becomes the mastermind of individual development changes. Its implication for education sector is synthesized by

Eun (2008, p. 144) into examples of professional development practices in the following table,

Key Theoretical . .

Related Professional development practices

Concepts

Social interaction Workshops, colloquia, seminars, mentoring, study groups

Internalization Individually guided activities (video self-assessment, journal writing)

Mediation Continuous follow-up support that includes the three types of

mediators' tools (materials resources); signs (newsletters and

journals); and other humans (professional networks).

Psychological systems Development of professional development programs that focus on

changing teachers' attitudes as well as instructional practices.

Adopted from Eun (2008, p. 144)

Social interaction includes training on workshops or similar activities for professional development. The model of training is based on the argument that teachers can interact with other experts and other individuals to share ideas and solution to a particular issue or problem in a group-based activities. Such interaction is seen necessary, especially for beginning teachers to develop their capacity as a professional teacher. Schmid & Hegelheimer (2014) highlights the importance of seminar or workshop attendance for pre-service and in-service teachers especially in the circle of technology-enhanced learning understanding of the potential of CALL applications for enhancing language teaching and learning and fostering positive attitudes towards the use of technology in the English classroom. Since EFL teaching is expanding overtime, following the current issues with technology, workshops, seminars, or other similar kinds are required to get the teachers updated with brand new ideas about teaching strategies.

Another central concept, internalization, refers to 'the process in which the use of tools (i.e., mediation) in human-environment or human-human interactions moves into the intrapsychological plane of the individual' (Eun, 2015). Because tool use originates in

actual, concrete interactions, psychological tools retain their social nature even after the process of internalization. Individually guided activities are one model of professional development that leads to self-analysis and personal reflection. These processes are fundamental for internalization to occur. It was previously noted that the movement from the social plane to the internal plane is not an automatic process. Individuals need to be continuously reflecting on the means and goals of their social interactions.

In organizing human thinking and development, Vygotsky emphasized the term “mediation by artefacts’ breaking down into tools, signs, and other humans. In practical implication to teacher education, the three types of mediation covers materials sources for ‘tools’, newsletter and journal acting as the signs, and professional networks for other humans.

Psychological systems require teachers to get involved in an involvement in a development program process. This type of professional development model illustrates the crucial role collaboration among peers play in the process of acquiring knowledge and skills. By conducting collaborative research and discussions, teachers engage in the

formation of a collective scaffold.

METHOD

Since this research has quantitative and qualitative source of data, mixed methods are applied. Despite relatively new in social science and education research, mixed methods can be an alternative option to utilize the strengths of both qualitative and quantitative research (Creswell, 2009) with the expectation to improve the whole quality of the research Johnson & Christensen (2012, p. 430).

Johnson & Christensen (2012, p. 437) suggest eight major stages to conduct mixed methods research. Those cover (1) determining whether mixed design is suitable; (2) determining the justification in using mixed methods; (3) selecting the mixed research design and mixed sampling design; (4) selecting the data; (5) analyzing the data; (6) continually validating the data; (7) continually interpreting the data and finding (8) writing the research report.

Simple quantitative approach was applied in counting the results of survey combined with pie charts since the data are in the form of numbers. In addition, qualitative approach was employed for analyzing results of interview with the respondents using social media due to the researcher’s hindrance in visiting some schools in remote

places. The researcher attempted to analyze the answers given by the respondents in depth.

Participants

The population of this study is the English language teachers of high school level in the town of Bangkalan in both public and private schools, where there are 4 Public Senior High Schools (SMA), 4 Vocational Senior High Schools (SMK), 1 Public Islamic Senior High School (MAN), and 5 Private Senior High Schools. Purposive sampling was

employed on this study in which the teacher(s) from each school
Questionnaire

The researcher used Google form for the questionnaire with the following link <https://goo.gl/forms/RZ3jzraWZsxK4Owk2>, There are 11 questions divided in three categories of questions covering computer facilities at home and office, computer use in classroom setting, and ability in using computer and internet. Open-ended and closed-ended questions were employed as the format of the questionnaires. In certain parts of the question list, the teachers were given freedom in delivering their own opinions and explanation regarding to their circumstances and methods in using CALL in instructional process.

FINDINGS AND DISCUSSION

CALL practices to support teachers' professional development

In the study, I reported how technology affected teachers in Madura in EFL instruction. This study sought to investigate the implementation of online and computer based language learning in diverse situation across Bangkalan regency with different cultures, student' competence level, and technology support from one school to others. This study focused on four schools: (1) public junior high schools (2) private junior high schools (3) public junior high schools (4) and private senior high schools.

Key Theoretical . ; .

CALL practices to support teachers' professional development

Concepts

Social interaction study groups using social media such as video discussion, Facebook groups, WhatsApp groups.

Internalization video self-assessment, electronic journal writing such as electronic

portfolios, student-made PowerPoint presentation

Mediation Using electronic materials resources taken from internet such as BBC

news, VOA news, and other electronic sources

Psychological systems Teacher training held by government related to technology-enhanced learning

In terms of social interaction, the teachers on this study seem to use modes of classroom communication and outside class interaction as a practical application of CALL. The most frequently used media for classroom interaction is using discussion on videos. Videos containing social problem was used to trigger the students to deliver opinion freely. This is effective since classroom becomes active with interactive discussion. The use of Facebook dominated that practice by having outside class interaction. The teachers assigned the students to do some kind of online discussion together with other students.

Internalization was performed by students through a series of project-based learning activities. The teachers directed the students to make video self-assessment in which the students make evaluation of their own by documenting it into a form of video files. Besides, in the current era with advanced technology, the students were asked by the teachers to make writing in the form of electronic journals or portfolios. This was done by publishing their piece of writing by posting it into blogs and social media such as Facebook and twitter. The other students make comments in a group of class related to the writing. PowerPoint presentation slides also become popular among the teachers to deliver materials. The ability to make the presentation slides becomes the basic ability for teachers in making use of technology in their classroom instruction.

Regarding to mediation, the teachers prefer to maximizing internet or web contents into their teaching resources. Internet becomes a global and open access for the teachers in developing or adopting authentic materials such as BBC world service , VOA news, and online newspaper like the Jakarta Post. The implementation of CALL becomes apparently clear that those teachers are capable of integrating the internet use for materials development.

Physiological system refer to the programs to encourage teachers in doing professional development as teachers. Those teachers are aware that their knowledge and

skill in technology-enhanced learning are still limited on the basic scope. It is necessary in the future, they can enrich their knowledge and skills in practices of technology-enhanced learning by participating in a series of workshops so that they become updated with the current issues of language learning.

What was found during the research is that the teachers tend to make use of computers only in limited scope. In other words, the coverage activities were very limited to the ordinary use without exploring more to the other variations of activities. In fact, there are numerous alternative activities that the teachers can maximize the computers do.

Table 2. Suggested. further classroom activities with computers

Teaching with one Self-access learning Distance learning

computer in the class

delivery of content drills and exercises delivering online course
(PowerPoint, word- content

processor, Webpages, etc.)

classroom word processing CMC activities: email,
activities/discussions discussion forum, chat
mediated by the computer rooms

Interactive whiteboard resource searching tandem learning

community building

CONCLUSION AND SUGGESTION

This research is a study on the use of multimedia computers and Internet in the learning embodied in the approach CALL to the teachers of English in Bangkalan as one of the suburban areas in East Java province. There are various difficulties faced by teachers in teaching with ICT, ranging from technical aspects such as the ownership of computers by public or private schools and electric power can be used, the availability of the projector, up to the teacher's familiarization in technology. It can be said that CALL practices has shaped how those teachers can integrate technology-enhanced learning in the 21st century. Through the lens of sociocultural perspective, the trend of CALL can develop teachers' professional development in the digital era as technology-updated

teachers.

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