EFL TEACHERS' COGNITION IN ICT: RELEVANCE FOR TRAINING AND PROFESSIONAL DEVELOPMENT

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ABSTRACT

Teacher cognition has been known as what teachers think, know, and believe. Its origin could be traced back to the development of Psychology highlighted complex relationship between what people do, what they know, and what they believe. Educational researchers believe that in teaching, teachers' mental lives play a role in their instructional choices. This study reports a case of EFL English teachers' cognition towards the use of ICT to facilitate language skill practice. Attitudes on the use of ICT by thirty eight English teacher participants of a training program on the use of cloud-based apps were assessed resulting in a higher perceived level of affective factors and usefulness of technology products than the other two; their perceived control on their use and their behavioural intention to explore them. Further open-ended assessment and interview revealed familiarity with various technology products for language teaching as beginner users as the biggest percentages. Results of this assessment provided useful information for ICT training conducts suggesting effective methods and techniques of material delivery and assistance. Moreover, the findings revealed choices of approach and strategies to enhance ICT professional development covering both internal and external factors are related with their job responsibilities and nature.

Keywords: professional development; teachers' cognition; ICT

INTRODUCTION

The development of information and communication technology (ICT) has given more choices to prepare and deliver materials. As one of the key roles to effective applications of ICT in the class, teachers' cognition or thinking towards computer for instructional use makes up a determining factor to influence their positive beliefs and values to students. Cognition has been defined to include what second-or foreign-language teachers think, know, and believe (Borg, 2005). Its constructs include attitudes, identities, and emotions, as that these aspects are acknowledged to be unobservable dimension of teaching (Borg, 2012).

Oxford and Shearin (1994) propose that one of the English teacher's tasks is to make a class as a positive place where psychological needs are satisfied and anxiety is reduced to the minimum. When it comes to technology application, the role of teacher to disemminate positive atmosphere through various teaching techniques including media they use become more evident. On the contrary, a teacher may fail to nurture positive teaching and learning atmosphere due to his negative attitude towards his teaching technique or technology used.

In relation with pedagogy ICT use for ELT, a discussion on the teacher's roles needs to be addressed, since they could be different from the ones in traditional teaching. It is obvious that possibilities of ICT use in language classes are numerous. This study is grounded on the necessity of assessing teachers' cognition towards the use of computers for English language instruction. Their attitudes towards the use of the technology, their current competence on its use, and other ICT products they wish to learn are investigated. Implications of this assessment would be elaborated in the light of ICT training program and further professional development.

RESEARCH METHODOLOGY

This study employs qualitative analysis using descriptive statistics to collect data from 38 high school English teachers of a regional teacher forum in Yogyakarta, Indonesia. The teachers' age ranges from 30-55 years old with almost 50% of them are between 46-55 and slightly above 25% are under 40.

In terms of teaching experience, almost half of the participants have been English teachers for 9-16 years and one third for 17-36 years. Consistent with their teaching experience, slightly below 50% of the participants have used computers for 6-15 years. This portrays that approximately half of the participants are middle-aged English teachers with quite extended teaching experience. Interestingly, the smallest percentage falls into groups of young teachers (30-35 years old with 1-8 years of teaching experience) and the longest time of using computers (26-35 years).

Diagram 1: Respondent age

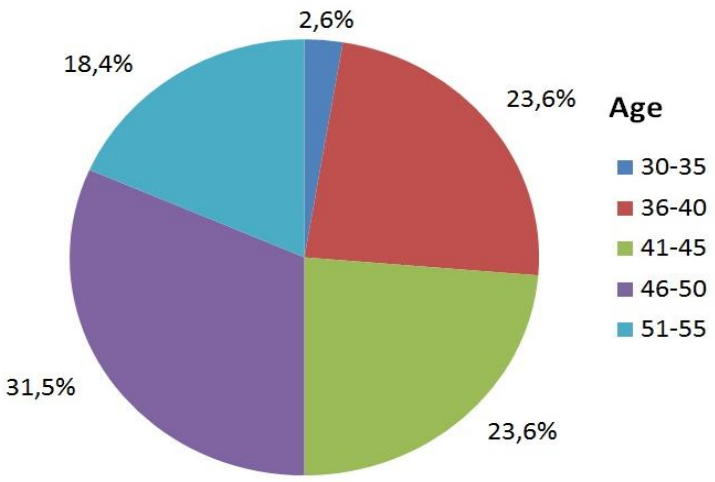


Diagram 2: Respondent teaching experience

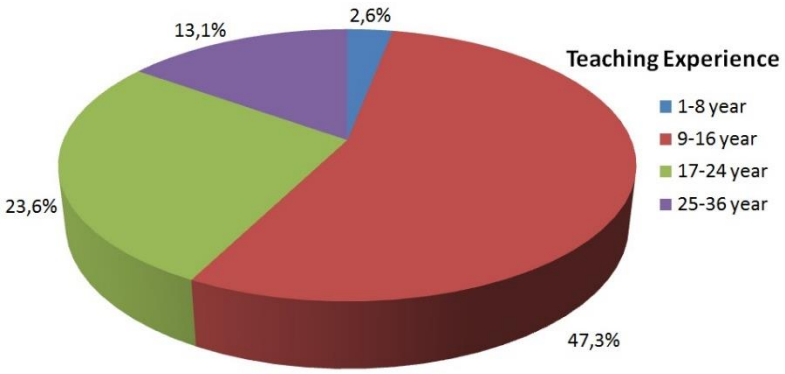
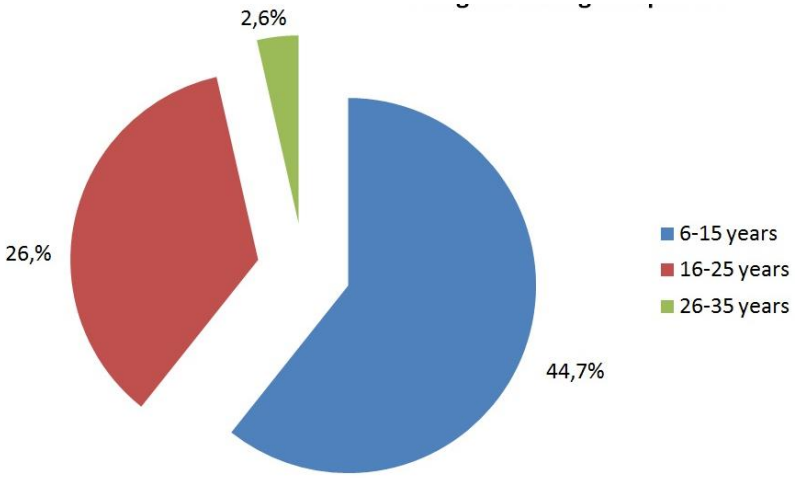


Diagram 3: Respondent experience of using computers



A questionnaire assessing attitudes towards computer use, their current ICT competence, and ICT products they wish to learn was distributed. This part of the questionnaire assessed their computer attitudes using Computer Attitude Scale (CAS), developed by Selwyn (1997). Four major components were assessed, namely affective component, perceived usefulness, perceived control, and intention to use ICT for language learning. The first component, 'Affect' measures feelings towards computers. 'Perceived Usefulness' measure the individual's beliefs about the usefulness of computers in their job. 'Perceived Control' measures the perceived comfort level or difficulty of using computers. The fourth component, 'Behavioral Intention' measures behavioral intentions and actions with respect to computers

FINDINGS AND DISCUSSION

The findings of this study suggest that the average scores on affective components are 4.1 and perceived usefulness are 4.00 on the scale of 1-5 scale. These two components indicate that the participants were positive on their attitudes towards computer use. Indeed, discussing technology integration into language teaching, consideration of teacher attitudes should be included as they make up the basic components within the main group of elements. The other findings suggest that the scores on the participants perceived control (mean 3.3), and behavioral intention to use the computer (mean 3.7) are lower than their attitudes towards computer use. These findings were comfirmed on the day of the ICT training where participants, despite their enthusiasm and active involvement, many of them faced technical difficulties working with computers in various problems. There were few that could not integrate the use of their Gmail address to the programs and apps due to unfamiliarity with the interface and log-in system. Moreover, many of the participants observably required step-by-step and visual explanation of the procedures to use the apps. Therefore, during labwork training these teachers needed personal assistance to do the tasks.

Table 1: CAS (computer Attitude Scale)

		mean	Std Dev	Cumm mean
Affective Component	7. If given the opportunity to use a computer, I don't feel afraid that I might damage it in some way	4.49	0.731	4.1
	8. I don't feel hesitate to use a computer for fear of making mistakes I can't correct	4.21	0.905	
	9. I don't feel apprehensive about using a computer	3.74	1.288	
	10. Computers don't make me feel uncomfortable*	4.15	0.886	
	11. Using a computer does not scare me at all	3.78	1.149	
	12. I don't hesitate to use a computer (in case I look stupid)*	4.08	1.105	
Perceived usefulness	13. Computers help me improve my work better	4.21	1.212	4
	14. Computers make it possible to work more productively	4.16	1.118	
	15. Computers can allow me to do more interesting and imaginative work	4	1.115	
	16. Most things that a computer can be used for I can do just as well myself*	3.59	0.896	
	17. Computers can enhance the presentation of my work to a degree which justifies the extra effort	4.03	0.944	

Perceived Control	18. I could probably teach myself most of the things I need to know about computers	3.92	0.969	3.3
	19. I can make the computer do what I want it to	3.63	0.883	
	20. If I get problems using the computer, I can usually solve them one way or the other	3.13	0.935	
	21. I am in complete control when I use a computer*	2.75	0.996	
	22. I need an experienced person nearby when I use a computer	2.89	0.966	
	23. I do not need someone to tell me the best way to use a computer	3.66	1.279	
Behavioral Intention	24. I would not avoid taking a job if I knew it involved working with computers*	3.18	1.182	3.7
	25. I don't avoid coming into contact with computers in school*	4.39	0.679	
	26. I don't only use computers at school when I am told to*	3.37	1.101	
	27. I will use computers regularly throughout school.	3.85	0.973	

Diagram 4: current ICT skills

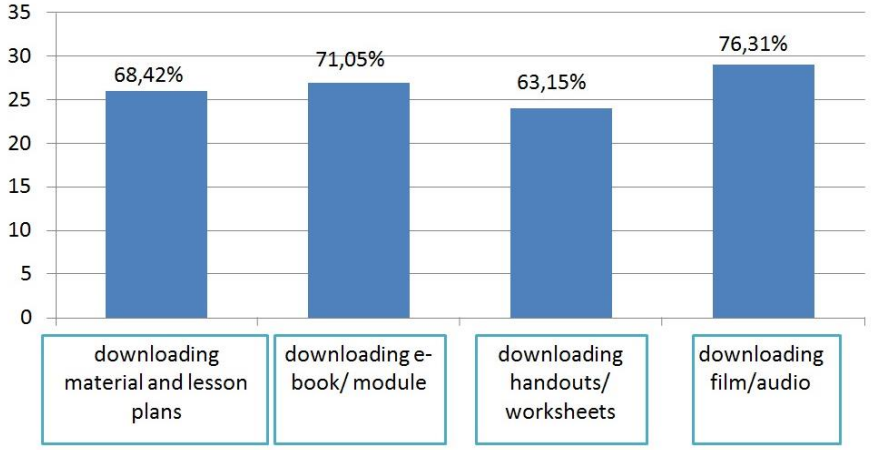


Diagram 5: ICT skills not mastered

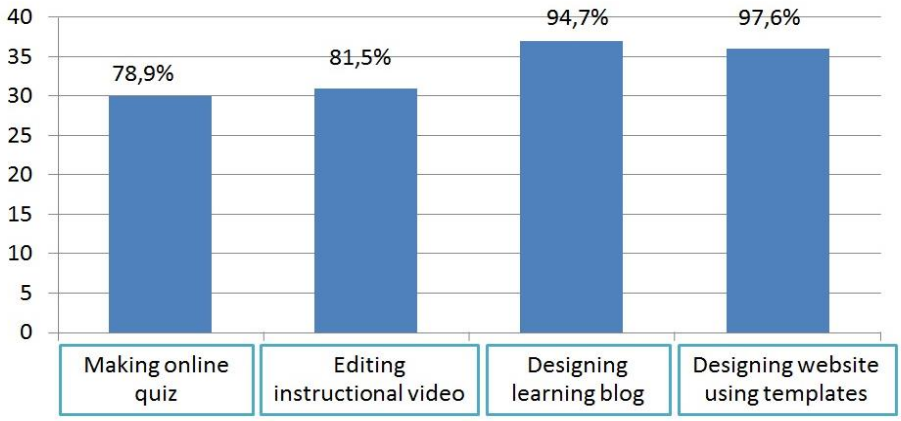
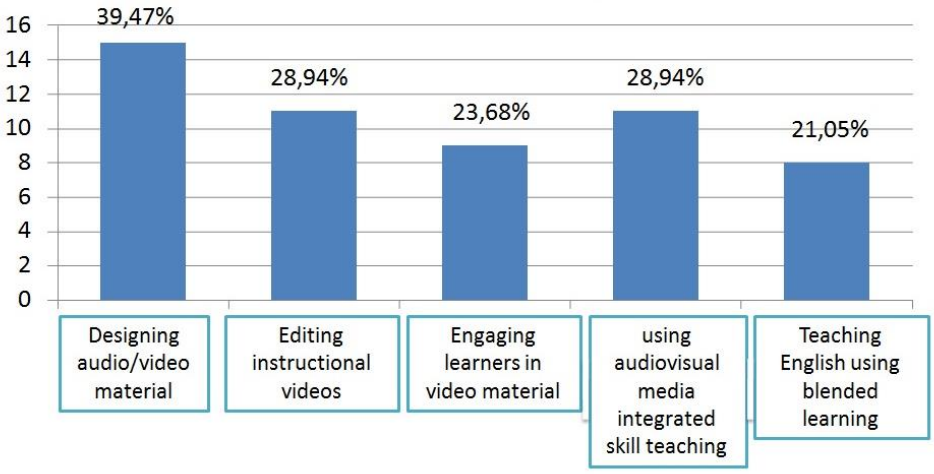


Diagram 6: most urgent ICT training



Other findings suggested that the participants were at the stages of being users of ICT products as shown that they were capable of downloading various teaching resources and admitted that they were not capable of or even needed training on designing materials and media using ICT (diagram 4, 5, and 6). Furthermore, interview results with the participants suggested their confirmation on positive attitudes and beliefs with ICT that did not directly lead to the use of the technology in their teaching. Various admitted problems were unstable internet connection in the classes, lack of technical competence to use ICT and solve its potential troubles, limited time to prepare materials and media due to 5- days school system, low level of innovativeness, and demands of standardized test drills. Some teachers stated that dealing with technical issues and troubles teachers could opt to be creative, however changing mindset of being "minimalist" and "this is my style" certainly require a lot of efforts, collaborative works, and strategies to deal with curriculum demands. It is also suggested that aside from improving supporting physical facilities, collaborative works at teacher forum such as regional or school-level MGMP *(Musyawarah Guru Mata Pelajaran)* to collect digital material and build repository of ready-to-use instructional media could be a solution. It is interesting to note from

the interview that real life situations sometimes made some teachers to slightly deviate from common practice of English lesson in high school as proposed by the curriculum or merely to prepare for the national exam. Often, this idealism costs extra efforts, energy, and money.

It is theoretically argued that teachers' beliefs about teaching and learning with ICT are central to its integration (Mumtaz, 2000). Hence the successful use of ICT in the classroom largely depends on their attitudes and belief. In other words, teachers who have positive attitudes towards ICT itself will be positively disposed towards using it in the classroom (Higgins and Moseley, 2001). Taking slightly different point of view, Braak (2001) and Rogers (1995) came up with the idea of innovativeness that is characterized by a concept of an umbrella including risk-taking, openness to experience, opinion leadership, and creativity. Yilmaz and Bayraktar (2013) proposed individual innovativeness, which is defined as willingness to adopt new innovation, eagerness for a change and trying new things and the degree to which a change is adopted by individuals or instututions in a social system before any other change.

Correlating between attitudes and innovativeness, Handal (2004) claims that positive beliefs and attitudes largely contribute to teachers' implementing a new innovation. However, the findings of this study suggest that positive attitudes and beliefs towards the potentials of ICT for language learning admittedly do not automatically lead to the real use of the technology for instruction. Wider and more holistic perspectives of viewing complexity of teachers' lives, job demands, and the true calling as educators are necessary to examine teacher cognition. Qiyun Wang (2008) proposes elaboration of pedagogy, technology, and social interaction as a generic model for guiding the integration of ICT into teaching and learning. It is further exemplified that these are the three components educational system. Moreover, Athanassios Jimoyiannis & Vassilis Komis (2007) suggest that teachers should be able not only to use ICT to support their traditional instruction but also to reorganize their instruction using ICT. It is furthermore proposed that programs and support for teachers' ICT implementation should be flexible, focused, and focused rather than uniform or identical for all. It is further proposed that policy concerning ICT in education should be principally addressed at two points, namely to help teachers use ICT not as a trend in the modern technology but as an efficient teaching and learning tool and secondly to integrate self development in ICT into the institution's professional development planning.

CONCLUSION

This study has elaborated what teachers know, think, and believe about ICT for language learning from a small population of English teachers making up their cognition. The participants' positive beliefs and attitudes towards ICT have been shown to be stronger than their control and intention towards its use as has been confirmed by other findings of this study. It is also observed from the interview that complexity of teacher cognition requires more comprehensive elaboration of its interrelated aspects. Various other factors could be determining teacher real use of ICT. Identification of positive attitudes and beliefs as proposed by some theories would not by themselves ensure real use of ICT for instruction. However, the

instruments of this study suggest approach and techniques to conduct ICT training and further professional development by revealing the participants initial profiles of ICT competence and their cognition about it.

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