

## Understanding Teachers' Computer Anxiety

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### Abstract

The rapid development of ICT has impacted language education in such a way that teachers are required to be proficient in computer technology. However, there is a fact that many teachers still experienced computer anxiety which can hinder the teachers in achieving the proficiency level required. This study aimed at finding explanations about computer anxiety experienced by English teachers in Indonesian context. 32 English teachers from Salatiga were given a questionnaire adapted from Koltrik and Redmann (2009)'s questionnaire to measure their level of computer anxiety. Subsequently, 14 of the participants who have moderate to very high anxiety were interviewed. The result of the studies shows that the teachers experienced computer anxiety with various psychological and physical symptoms. The computer anxiety was caused by four categories of factors namely social matter, psychological matter, teachers' ability and technical matters. The study also revealed that the teachers had thought of strategies to cope with the computer anxiety. They are alternative action, social solution, individual preparation, self-motivation, and facility provision. The findings of the study is expected to be useful for those who wish to understand more about computer anxiety and those who are struggling with computer anxiety.

Keywords: teachers, computer anxiety

### Introduction

It is without question that the advancement of information and communication technology (ICT) has changed the dimensions of education in Indonesia including the face of language education. Nowadays, not only websites and blogs, learning management system like *Edmodo* and *Schoology*, social media like *Facebook*, *Instagram*, and *Twitter*, and other computer assisted language learning (CALL) tools like *Today's Meet* and *Duolingo* have enriched and cherished language teaching and learning in this country. This somehow has made language

teachers' mastery of computer become very important. Even the government seems to be aware of the importance as the Minister of National Education issued the regulation no. 16, 2007 about *Standar Kualifikasi Guru* (the teacher qualification standards) in which teachers are required to be capable in using information and communication technology for teaching, such competence will indicate their pedagogical competence. This is in line with Sam, Othman, & Nordin, (2005) who argue that a person's capacity in ICT can be one of the measurements

whether the person is ready or not to work in this 21<sup>st</sup> century.

The importance of teachers' computer mastery has also been highlighted by the findings of some studies which revealed the advantages of using technology in language classrooms. Zhao (2013) reveals that students that are taught using computerized multimedia, instructional video, online spell checker, glossary and the web learned language better than those who are taught without the technologies. Smith (2008) also claims that the use of computers in the classroom has proven to be beneficial for students in many aspects. Other than facilitating the learning process, it also develops students' ability in analysing information and solving problems. Similarly, Aurora and Silvia (2013) state that if language teachers use technology the students' linguistic skills will improve, and their learning attitude will change as they build their self confidence.

Considering the crucial value of technology and the society's expectations, many education institutions have provided computers and the facilities related to computer use for the teaching learning processes. However, when I had the opportunity to observe some schools in Central Java, I found that though many teachers use computers in teaching, only some enjoy the process. Many of the teachers seemed to have a certain degree of

anxiety when using computers in teaching. Meanwhile, a teacher is the key 'actor' who deal with the technological devices for teaching and who determine the success or failure of learning, as Kim (2012) state that teacher-related factor such as anxiety can be one of critical causes influencing the success of adopting technology into the classroom.

Some studies on teachers' technology anxiety have been done, but they mostly are in quantitative method, measuring the teachers' levels of anxiety, while more information the kind of anxiety the teachers have, the sources of anxiety are still needed. This paper is aimed at examining the computer anxiety in a qualitative way to find out in what way and situation do English teachers in Salatiga, Central Java, feel anxious in using computers in the classroom? and what strategies do the teachers suggest to overcome the anxiety? This is in accordance to Russel and Bradley's (1997) idea that though computer fear is difficult to be eliminated, identifications of anxiety sources and levels, and strategies for to reduce the anxiety are important things to investigate.

The findings of the study is expected to be useful for language teachers especially those who want to know about computer anxiety. It is also expected to be useful especially those who experience anxiety in

using computer technology in the classroom. Hopefully it can provide assistance to minimize and overcome the anxiety.

## **Literature Review**

### **Types of computer technology used in language learning**

There are many kinds of technologies that teachers can use in their teaching and learning process. Stanley (2013) classifies technologies into internet, software, and hardware. The internet involves the use of blogs, instant messaging, comic-creator website, news websites, online games, social networks, text and voice chat, ext and voice forum, and video sharing websites. Software that can be used for the teaching and learning process is like apps, ebooks, email, music software, quiz-making software, screen-capture tools, word processors, presentation software. As for hardware, teachers can use CD-ROMs, computer room, digital camera, DVDs, laptops, mobile phones, mp3 players, netbooks, pen/flash drives, tablets, video cameras, voice recorders, and webcams. However, as all categories are related to the use of computer, in this paper, the term “computer” refers to any of the three categories.

### **Computer Anxiety**

Based on the theory of language learning, anxiety is associated with “feelings of uneasiness, frustration, self-doubt, apprehension, or worry” (Scovel, 1974, as cited in Brown, 2000, p. 151). Such anxiety can occur when someone is learning and/or using new technological tools. Meanwhile computer anxiety according to Howard and Smith (1986) is the tendency of a person experience a degree of uncomfortable feeling when dealing with computer. Kanfer & Heggstad (1997), however, see computer anxiety more than just a feeling of discomfort, they perceive computer anxiety as an emotional fear of potential negative outcomes such as damaging the equipment or looking foolish. Similarly Chua, Chen and Wong (1999) define anxiety as fear of computers when using one, or fearing the possibility of using a computer. The theories suggest that computer anxiety includes uncomfortable feelings, and fears toward the use of computer. This is in line with Chang (2005) who views computer anxiety as the teachers’ feeling of discomfort, apprehension and fear of coping with ICT tools or uneasiness in the expectation of negative outcomes from computer-related operations.

Further, Orr (2009) suggest that computer anxiety can have different forms such as sense of frustration, possibility of

shame, disappointment and experiencing fear of obscurity. These forms of computer anxiety is related to human psychology and usually occur after the symptom like sweating, dampening of hands, stomachache, difficulty in breathing or feeling of suffocation, palpitation and strain of lips (Çakıroğlu 2009). In relation with the symptoms of computer anxiety Dupin-Bryant (2002) promotes two categories, physical and psychological symptoms. Physical symptoms can be in the form of blanching (face is pale/loss of colour), blushing, flushed skin, body temperature increase and decrease, burning sensation on the face, neck, ears, scalp, or shoulders, chest pain, chronic fatigue, exhaustion, dizziness, lightheaded, heart palpitation, racing heart, excess energy, can't relax. Mental symptoms can be detected from someone's difficulty in concentrating, short-term memory loss, difficulty thinking, speaking, forming thoughts, fear of losing control, impending doom, frequent feeling of being overwhelmed, short-term learning impairment, having difficulty in learning new information, underlying anxiety, apprehension, or fear.

According to the study done by Russel and Bradley (1997), there are things that can trigger the symptoms of computer anxiety. First is the task involves in using computers, when teachers do not know how to do certain task they tend to experience

computer anxiety. The second is the fear of causing damage to computer, when teachers are afraid that they make mistake and damage the software or hardware of the computer they also experience computer anxiety. Third is the embarrassment associated with the use of computer, when teachers are afraid to make mistake in using computer in front of students or other people they experience computer anxiety. Another thing that can cause teachers' computer anxiety is different computers system used in a school.

### **Methodology**

As mentioned previously this study is qualitative. It studies "things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them" (Denzim and Lincoln, 2000, p.3). The phenomenon observe in this study is teachers' computer anxiety.

The context of the study was an education institution in Salatiga, a small town located in between Solo and Semarang in Central Java. This institution was chosen as the context of the study because it employs many language teachers who teach English as a Second Language. Another reason of choosing the institution is that because it provides computer technology for the teachers to do the language learning process.

The subjects in this study were thirty two (32) English teachers . Out of the thirty two, seven (14) teachers were interviewed further. Those are the ones identified as teachers with moderate, high, and very high level of technology anxiety.

The instrument used to obtain the data was questionnaire and interview. The questionnaire was constructed by Kotrlik and Redmann (2009) and used to determine teacher's level of anxiety. It consisted of 12 questions and used likert scale from 1 to 5. 1 suggests No Anxiety, 2 means Some Anxiety, 3 indicates Moderate Anxiety, 4 indicates High Anxiety, and 5 shows Very High Anxiety. Scale interpretation ranges for the scale means. 1 points to No Anxiety (1.00- 1.49), 2 shows Some Anxiety (1.50-2.49), 3 points towards Moderate Anxiety (2.50-3.49), 4 suggests High Anxiety (3.50-4.49), and 5 means Very High Anxiety (4.50-5.00). Scale  $M = 1.97$  ( $SD = .95$ ).

The second instrument is interview. It was used to find out in what way and situation the teacher-respondents feel anxious in using technology and to find out ways they usually do to overcome their computer anxiety. The interview used a structured interview in which a list of questions had been set in a predetermined order and the agenda of interview was decided by the researcher (Nunan, 2001). In order to provide convenience for the

respondents and achieve the same perspective about the ideas stated in the interview, the interview was conducted in Indonesian.

The data were collected through the following steps. First, the questionnaire was distributed to 32 teachers to find out their level of anxiety. The result showed that 7 of them were identified to be in moderate level of anxiety; 3 of them were in high level of anxiety; and the rest 4 were in very high level of anxiety. As the second step, the 14 teacher-respondents were interviewed to know in what way and situation they feel anxious when adopting technology in their EFL classrooms and to know how they cope with their anxiety.

The data collected from the questionnaire was analyzed by finding the scale means and categorize it into No Anxiety, Some Anxiety, Moderate Anxiety, High Anxiety, and Very High Anxiety. The data from the interview were analyzed by classifying the answer into in what phase (s) of learning they usually feel anxious when adopting technology in their EFL classes, their symptoms of anxiety, and what they do to overcome their anxiety. After the categorization, the answers in each category will be drawn to emerging themes. These emerging themes will be used to answer the research questions: In what way and situation do the teachers feel anxious when adopting technology in their ESL classroom?

And what do they do to overcome their anxiety?

### **Findings and Discussion**

The study revealed that almost all of the participants experience computer anxiety. Most only experience some anxiety while 14 of them experience moderate to very high anxiety. This section discusses the result of the interview to the 14 participants, starting from the types of computer anxiety they experienced, the symptom of computer anxiety they usually have, what they think as the cause of computer anxiety, and their effort to overcome the computer anxiety.

### **Computer Anxiety Types**

There are three types of anxiety found in the study. They are anxiety related to technical matter, anxiety related to psychological matter, and anxiety related to teachers' capacity. Most of the participants experience at least two types of the three kinds of computer anxiety.

#### *Anxiety related to technical matter*

There are 8 participants revealed that they experienced anxiety related to technical matters. Some of them mentioned that the computer anxiety is related with whether or not the programs or devices that they used would work as they expected. Some also revealed that they experienced anxiety when they realize that there can be changes in the

programs that they used because of the device they used at home is different from the one provided by the institution which may lead to the changes in the design of the lesson. Some other participants mentioned that they experience anxiety when incidents happened like when the electricity suddenly went off. This type of anxiety is related to what Russel and Bradley (1997) describe as task involved in using computers.

#### *Anxiety related to psychological matter*

Like what Orr (2009) has mentioned that anxiety is related to human psychology, 12 of the participants confessed that they experienced anxiety related to psychological matter. There are two things that are mostly mentioned by the participants. The first thing is that they experience computer anxiety for they do not feel connected to computers; they do not feel "the chemistry" working with computer technology. The second one is that they experienced fear when working with computers, fear of making mistakes and fear of unexpected things that may happen.

#### *Anxiety related to teachers' capacity*

This type of anxiety is connected to teachers' self-efficacy. Bandura (1994, p.2) defines self-efficacy as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect

their lives”. Self-efficacy is said to have influenced in the way people feel, think, and behave. 4 of the participants stated that they experienced this type of anxiety. They expressed that they experienced it when they felt that that they could not operate certain devices or use certain programs, they did not know what to do with the devices or programs and they feel that they would not be able to keep up with the development of computer technology.

**Symptoms of Computer Anxiety**

In this study the symptoms of computer anxiety of the interviewee are classified into two based on the theory proposed by Dupin-Bryant (2002), psychological and physical symptoms. In this case, most participants, 13 out of 14, said that they experienced psychological symptoms. Many of them, however, mentioned that they also experienced one or more physical symptoms. Only one participant stated that he only experienced physical symptoms without psychological symptoms. We can see the symptoms as listed in table 1.

Psychological	Symptoms
Physical symptoms	
feeling	confuse
fluttering arms	
losing	concentration
sweating all over	
feeling	low-spirited
burning sensation on the face	
having a bad	mood
burning sensation on the ears	
feeling	depressed
rapid heart beat	
feeling	worried
dizzy head	
feeling	regretful
hypertension	
feeling	unhappy
nausea	
feeling frustrated	
feeling upset	
feeling uncomfortable	
feeling hopeless	

Table1. Computer Anxiety Symptoms

**Causes of Computer Anxiety**

The study revealed that there were many things that can trigger computer anxiety. Each of the participants revealed more than one causes of computer anxiety. Taking a close look at the causes gathered, there are four categories can be made. They are social matter, psychological matter, teachers’ ability, and technical matter.

*Social Matter*

This particular category of computer anxiety causes is the one mentioned more frequently than the other three causes, this probably because social acceptance is very

important for us who live in Indonesia. The causes of anxiety that fall into this category are first feeling uncomfortable because other teachers had used technology successfully in teaching. This had made the participants feel that they are required to do as good as others. Second, feeling inferior to others; some teachers seemed to be really talented in using computer technology that others feel inferior. This also made many of the participants experienced computer anxiety. The third cause is the most common cause of computer anxiety, i.e. feeling afraid to be judged by others. The fourth is feeling embarrassed when students know more about computer technology. This confirms, Russel and Bradley's (1997) findings the embarrassment associated with the use of computer. The last cause is feeling traumatized because of colleagues' underestimating statement.

#### *Psychological Matter*

The second category of computer anxiety causes deals with teachers' individual feelings toward the use of computer technology. The first two causes that fall into this category are fears, which is one of the characteristics of computer anxiety (Kanfer & Heggstad, 1997; Chua et al., 1999; Chang, 2005; Orr, 2009). They are the fear of trying new computer technology and the fear of losing concentration if using technology. The third

cause is that the teachers do not feel motivated to use computer technology. The last cause is that teachers do not like to use computer technology.

#### *Teachers' Ability*

The third category of computer anxiety causes refers to teachers' proficiency in using computer technology. The participants revealed that their lack in computer technology proficiency is the cause of anxiety. Some said that they did not have enough knowledge about computer technology that made them feel they would not teach perfectly if they have to use the technology. Some others said that they have difficulties memorizing the steps in using programs and operating devices. In addition, there are teachers who expressed that they do not have the ability to adapt with the computer technology. It seems that the last group of teachers need to increase their self-efficacy as Hill, Smith, & Mann (1987) claim that self-efficacy can affect the decision in using computer technology.

#### *Technical Matters*

The last category of computer anxiety causes related to technical things that sometimes cannot be avoided like when the electricity was suddenly off. Some, however, can actually be managed like when other facilities related to technology would not work properly, and when the



physical design of the technology made it difficult to use. There are ways to deal with them like early preparation.

### **Strategies for Computer Anxiety**

In the study, the participants were also asked to mention the strategies that they thought can help them overcoming the computer anxiety. Interestingly they came up with many ideas. Their ideas can be classified into five categories, social strategy, individual preparation, alternative action, self- motivation and facility provision.

#### *Alternative actions*

Among others, alternative action is the most frequent strategy for computer anxiety mentioned by the participants. This means that teachers should prepare “PLAN B” or even “PLAN C” if the computer technology does not work as expected. This may be a good strategy. However, this requires the teachers to work harder in preparing the lesson which may be burdensome for some teachers. Consequently, it may also lead to another cause of computer anxiety

#### *Social strategy*

The second possible strategy thought by some of the participants is getting social support. Most of the participants said that they can actually get help when trying to use

certain programs or devices from trusted or close individuals like friends and family members. They also mentioned of getting help from a more knowledgeable person, like computer technicians or programmers. Some even mentioned that they can get help from their students which may work if the teachers do not feel embarrassed that they know less than their students. Getting help from students should be carefully done to avoid embarrassment since according to Russel and Bradley (1997) embarrassment can be a source of computer anxiety.

#### *Individual Preparation*

Another strategy mentioned by some of the participant is teachers’ individual preparations. Teachers needs to make sure that the devices and programs work well before the class. This means teachers should allocate more time to check and re-check the computer technology. It is ideal if teachers can have enough individual preparation. However, teachers are usually busy with various tasks, meaning this strategy will work only for a small number of teachers, those who have enough time.

#### *Self-motivation*

The next strategy suggested by the participant is to do self-encouragement. This means that teachers need to dare themselves to learn more about computer technology. They need to get rid of the fear

in using computer by thinking positively, for instance when they use computer their students will get more benefits from the learning process. This strategy may work for teachers with moderate level of anxiety. Teachers with high and very high level of anxiety many need other strategy before they can motivate themselves, perhaps by increasing their self-efficacy as Hills et.al. (1987) state that self-efficacy can change people's attitude toward the use of computer technology.

#### *Facility Provision*

The last strategy suggested by the participants is related with the institution and its policy, i.e. facility provision. Provision according to *Merriam Webster Dictionary* is an act or process of providing. Here, the teachers expected that institution would provide facilities such as trainings and supports when the teachers need to use or even buy the devices needed for teaching. This strategy may work depending on the institution's capacity.

#### **Conclusion**

The current study has found some information about computer anxiety. It

revealed that English teachers may experience computer anxiety related with technical matter, psychological matter, or teachers' capacity. It also found that the computer anxiety is often preceded with different kinds of physical and psychological symptoms. However what is necessary to be highlighted is the findings on the causes of computer anxiety since we can find the strategies to cope with the computer anxiety if we understand the causes. Meanwhile the strategies suggested by the participants in the study can also be considered.

Talking about the strategies that can be used to deal with causes of computer anxiety, actually the more knowledgeable individuals surrounding the ones who experience compute anxiety can help. They can give necessary support such as encouraging especially those who have high and very high computer anxiety to keep learning. They can also become mentors in computer technology for the ones having low level of proficiency. Further and deeper study can be also be done to find more causes of anxiety and more effective strategies to overcome teachers computer anxiety.

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## Appendix

### Questionnaire

Dear teachers,

I am conducting a research related to the use of technology in your teaching in FLL. Can you help us by filling in this questionnaire? Your identity will be kept confidential.

Thank you.

Regards,  
ME

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#### A. Questionnaire

Instruction: Please choose one of the scales by putting a tick mark (✓) in the appropriate box of each question.

Scale:

- 1 = No Anxiety
- 2 = Some Anxiety
- 3 = Moderate Anxiety
- 4 = High Anxiety
- 5 = Very High Anxiety

Questions	1	2	3	4	5
1. How anxious do you feel when you cannot keep up with important technological advances?					
2. How anxious do you feel when you are not certain what the options on various technologies will do?					
3. How anxious do you feel when you think about your technology skills compared to the skills of other teachers?					
4. How anxious do you feel when someone uses a technology term that you do not understand?					
5. How anxious do you feel when you hesitate to use technology for fear of making mistakes you cannot correct?					
6. How anxious do you feel when you are faced with using new technology?					
7. How anxious do you feel when you try to understand new technology?					
8. How anxious do you feel when you try to use technology?					
9. How anxious do you feel when you try to learn technology related skills?					
10. How anxious do you feel when you avoid using unfamiliar technology?					
11. How anxious do you feel when you fear you may break or damage the technology you are using?					

12. How anxious do you feel when you think about using technology in instruction?					
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**B. Participants' Data**

Instruction: Please fill in the participants' data below. There may be a follow up interview based on the result of the questionnaire. Your data will be kept confidential.

Name/Initial : \_\_\_\_\_

Phone no. : \_\_\_\_\_

Email address : \_\_\_\_\_