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TAKING A CLOSER LOOK AT BLENDED LEARNING ACTIVITIES IN A PARAGRAPH WRITING COURSE

Research Article

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Abstract

Blended learning has been talked about a lot in contemporary higher education and seen as the perfect solution for improving the quality of learning. In spite of the widespread support of acceptance this approach has gained, it is admitted that there is no single standard formula for a successful blended learning program, and thus more cases of blended learning need to be reported. This paper reports a study of the implementation of blended learning in a paragraph writing course with the aims of taking a closer look at the blended learning activities carried out in the course and revealing the responses of the students about the activities. This case study involved one lecturer and six student participants from the paragraph writing class, which were selected purposively. Data were collected through interviews, observations, and document analysis. The findings showed that there were five main learning activities in face-to-face instructions and five activities online. These activities were intended to maximize the use of classroom time for active and collaborative learning activities, supplemented with online activities to reinforce learning undertaken in the classroom. In general, student responses to blended learning activities in the paragraph writing course were positive.

Keywords: blended learning, face-to-face, online, paragraph writing

1. Introduction

Advanced technologies have provided people with various kinds of conveniences. In this digital era, life seems to become smoother especially due to the invention of Internet technologies supported by sophisticated devices that make interaction and communication much easier. This has resulted in inevitable changes in various fields of life including in education as well as in teaching and learning. One of the breakthroughs the technologies have established is the emergence of online learning and it has been viewed to possess the potential for quality learning. Online learning alone, however, is considered not sufficient because learners are not all the same in their learning preferences and not all skills, especially practical skills, can be learned online (Epignosis LLC, 2014). Combining the online learning and traditional face-to-face learning is seen as more beneficial because it could combine the best of both learning methods. However, Garrison and Vaughan (2008) alerted that in spite of the concept of blended learning that may sound simple, the practical application is more complex. Moreover, there is no best standard formula for blended learning, so the instructors

need to plan the program thoroughly and learn from any successful blended learning practices that can be adopted or modified according to their instructional objectives and learner needs.

There are various reasons underlying the decision of an instructor in choosing blended learning as the instructional approach in his course. Some may opt to integrate online learning into their traditional instructions because they want to establish effective learning in large classrooms while others may aim at boosting student engagement in learning, and several try to maximize the use of classroom time by supplementing the face-to-face instruction with online learning activities. Although many proponents of blended learning assert that blended learning should not be an addition but “restructuring and replacing traditional class contact hours” (Garrison & Vaughan, 2008, p.5), EFL teachers are usually aware of how short the course and class time are; hence, instead of replacing the existing face-to-face meetings with online learning sessions, they add the online learning activities to enhance learning experience. It is also the reason motivating a writing lecturer at a university in Indonesia to implement this approach in her paragraph writing course.

Several studies have investigated the implementation of blended learning in writing courses. Sicat (2015) in his study found that the integration of a Learning Management System (LMS) into a business writing class effectively enhanced students’ proficiency in business writing. Zainnuri and Cahyaningrum (2017) conducted a case study to investigate the use of some features on the LMS *Schoology* to enhance students’ proficiency in argumentative writing. Their findings showed that the features on *Schoology*, particularly the discussion feature, facilitated the activity of peer review which encouraged students to think critically and enhanced students’ proficiency in argumentative writing. These previous studies focused more on the learning activities on the LMS in blended learning to enhance students’ proficiency in writing, while this present study investigated not only the learning activities on the LMS as an online platform but also the instructional activities in the face-to-face setting in a paragraph writing course. Detailed descriptions of the blended learning activities, both on *Schoology* and in the face-to-face setting, will provide the information of how the blended learning activities were carried out so that the benefits of each activity could be maintained while the drawbacks could be overcome. Therefore, the purposes of this study were to take a closer look at the blended learning activities carried out in the paragraph writing course and to reveal the students’ opinions about the activities.

2. Literature review

2.1. Blended learning

It has been acknowledged that there is no specific definition of blended learning because scholars and academics have different interpretations of this term. The term ‘blending’ has been used for long periods of time to indicate the instructional practices incorporating different kinds of resources and activities within various learning environments (Littlejohn & Pegler, 2007). Bersin (2004) described it more specific as the “traditional instructor-led training supplemented with electronic formats” (p. xv). Macdonald (2008) related it to the emergence of online learning and suggested that blended learning is the introduction of online media into a course. Thorne (2003) asserted that blended learning is to combine “online learning with more traditional methods of learning and development”. Meanwhile, Garrison and Vaughan (2008) view blended learning as “a design approach whereby both face-to-face and online learning are made better by the presence of the other” (p. 5). From these suggested concepts, it can be concluded in short that blended learning is combining online learning and face-to-face learning, in which both learning modes complement to one another for better results. It is obvious that the principle of blended learning is combining the best elements of online learning and face-to-face learning.

2.2. Learning management system

Blended learning in a traditional face-to-face classroom can be accommodated by using e-learning software such as a Learning Management System (LMS) for the online learning platform. The LMS enables students to access materials online and to be connected to data and to each other as well as enabling instructors to diversify their teaching materials and media. *Schoology* is one of the best learning management systems listed by Fenton (2018). *Schoology* can serve as a learning management system and a social network device. As a learning management system, *Schoology* involves the activities of content development, assessment, and some others so that instructors can spend less time on administrative tasks and more on instructional activities (“An introduction to Schoology for higher education”, n.d.). As a social networking device, *Schoology* works like *Facebook* in which users are able to communicate, update statuses, send messages, and share information within the network.

2.3. Paragraph writing

Good academic writing is made up of paragraphs with one clear idea per paragraph (BBC, n.d.). From this notion, it is obvious that paragraphs play an important role in academic writing. Zemach and Rumisek (2005) define a paragraph as “a group of sentences about a single topic” (p. 11), and these sentences describe the author’s main idea about the topic. A paragraph can explain something, give an opinion, share information, or tell a story. Three basic elements of a paragraph include the topic sentence, supporting sentences, and concluding sentence. In addition to the ability to develop these elements to be a paragraph, one should be able to make the paragraph unified and coherent as well as paying attention to the structure and the rules of the written language, which are certainly not easy. Students can find it challenging to find ideas to include in their writing (Zemach & Islam, 2007) and may find it difficult to make their writing unified and coherent, so Zemach and Islam (2007) assert that learning to write well takes a lot of practice and patience. Students need clear guidance, positive feedback, and interesting ideas to write about.

2.4. A process approach to writing

Zemach and Rumisak (2005) assert that writing is not only putting words together to make sentences but also going through the process of producing a piece of writing. This process of writing which is called the process approach to writing involves several steps that include pre-writing, drafting, reviewing and revising. A process-based approach to writing generally focuses more on linguistic skills including planning and drafting, and less on linguistic knowledge, such as text structure and grammar (Badger & White, 2000). In other words, it emphasizes fluency and content, encouraging process and self-expression over form and grammar. The strategies in the process approach to writing assume that “students will write towards their own form and that grammar will be learned later, that process is more important than product” (Burdick, 2011 as cited in Gugin, 2014, p. 29).

3. Methodology

This case study was conducted at a university in South Kalimantan, Indonesia, from May to July 2018. The participants were six undergraduate students and one lecturer of a paragraph writing class at the university. Six student participants were purposively selected as the respondents among 27 students in the class. Data were collected through interviews, observations, and document analysis. The interviews were carried out to the lecturer to find out the instructional activities conducted in the blended learning course and to the student participants to uncover their opinions about the activities. The observations were also conducted to reveal the instructional activities on face-to-face learning mode and in online learning mode, while the document analysis was intended to get the supporting data. Data

were analyzed using the Miles and Huberman's (2014) interactive model, consisting of the steps of data condensation, data display, and drawing and verifying conclusions.

4. Findings and Discussion

The Paragraph Writing course was offered in semester four, consisting of fourteen meetings for instructional activities and two meetings for the middle and final tests. Each meeting was set face-to-face while the online learning was supplementary to the face-to-face meetings. The face-to-face meeting was carried out once a week and the online learning was provided for students to do anytime and anywhere with a deadline set for each online weekly assignment. One should get a class code to be able to join the course on *Schoology*.

All materials were uploaded on *Schoology*, and they were based on the topics in the syllabus, which included the elements of a paragraph, process of paragraph writing (pre-writing), process of paragraph writing (writing supporting sentences), unity, coherence, descriptive paragraph, process paragraph, classification paragraph, definition paragraph, comparison-contrast paragraph, cause-effect paragraph, and opinion paragraph. The materials were uploaded before the face-to-face meetings, to enable students to preview the materials before the face-to-face meetings.

From the observation in a classroom meeting, there were several main activities identified, revolving around one topic (Table 1). Some activities carried out online on *Schoology* were listed in Table 2.

Table 1. *Blended learning activities in the classroom*

Class meeting	Blended learning activity	Note
Topic: Comparison-contrast paragraph	(Lesson materials in pdf & ppt formats about the comparison-contrast paragraph were uploaded on <i>Schoology</i> before class)	
	- Lecturer displayed students' pieces of writing previously uploaded on <i>Schoology</i> about "definition paragraph" (last meeting's topic) and gave feedback to the students on their work.	Teacher-student conferencing
	- The lecturer explained comparison-contrast paragraph and two possible organizations: block and point-by-point.	Lecturing
	- In pairs, students were asked to read a paragraph (provided in the material already uploaded on <i>Schoology</i>) and draw an online of the paragraph.	Pair work
	- Several students were asked to write down the results on the whiteboard and the class discussed the results together.	Class discussion
	- The lecturer explained transition signals in comparison-contrast paragraph	
	- Students were asked to practice combining sentences using appropriate transition signals and discussed the results together.	Lecturing
	(For the homework, students were asked to write a comparison-contrast paragraph outside classroom hours on <i>Schoology</i>).	Class discussion
- At the end of the term, students were asked to print out all the assignments including quizzes done on <i>Schoology</i> , and make a portfolio.	Portfolio	

Table 2. Learning activities on the online platform

Online Platform	Activity	Note
<i>Schoology</i>	- Materials (pdf, word, & ppt) about the topics of the course were uploaded before face-to-face instructions.	- Uploading materials
	- Quizzes were put online and students were asked to complete them outside of class hours.	- Online quizzes
	- Writing assignments were done outside class hours and submitted online.	- Online writing assignments
	- Students' writing assignments were displayed on "Updates" page of <i>Schoology</i> .	- Displaying assignments
	- Students and lecturer were allowed to give feedback on students' pieces of writing.	- Online feedback

From Table 1 and Table 2, the blended learning activities that the lecturer implemented in the paragraph writing course can be listed as follows, which include students' responses to the activities.

a. Online

1. Uploading materials

All course materials in pdf, word, and ppt formats were uploaded on *Schoology* before face-to-face instructions. It was intended to enable students to access the materials anytime and anywhere through their mobile devices, and it would give the opportunity to the students to preview the content. Bowyer (2017) states that if the materials are uploaded on the online platform for pre-reading, the classroom time can focus on deeper analysis or discussion of the topics. Twigg (2003) also asserts that such activity encourages greater student engagement with course content.

Most student participants appreciated this material uploading because they could access the material from their phones, but not all of them previewed the material before a class as stated by some students,

Sometimes I pre-read the materials but most of the time I prefer listening to the lecturer's explanation and discussion in the class. (S1)

I rarely pre-read the uploaded material because I like to have it discussed first in the class and I would relearn it at home later in the evening. (S2)

It indicated that some students did not pre-read the materials and were more familiar with lecture-based learning. That some students do not engage with the online activities, including pre-reading the uploaded materials, is a common complaint from instructors (Perez & Riveros, 2014 as cited in Bowyer, 2017). Garrison and Vaughan (2008) suggest that the pre-class reading activity should be followed by a self-assessment, quiz, survey, or discussion forums activity. Such activities should be made compulsory (Bowyer, 2017), so that students would be encouraged to read the materials to complete the tasks.



Figure 1. Materials uploaded on Schoology

Figure 1 is a screenshot of materials uploaded on *Schoology*. Students could access and download the materials through their handphone and other mobile devices using the Internet connection.

2. Online quizzes

Online quizzes were given three times in the early meetings, namely identifying the topic sentences of several paragraphs, paragraph unity, and transition signals for coherence. The quizzes were given after in-class instructions and they were scored automatically on *Schoology*. The quizzes were intended to assess and strengthen students' knowledge and understanding about the content already taught in the class. Nelen (2017) states that interactive quizzes will stimulate knowledge retention, helping to remember and use the obtained knowledge. Students showed positive responses to this activity, as one student said,

Through taking the quizzes I can get new information and I can assess my knowledge. In addition, because the online quizzes allow me to retake the quizzes a few times to attain the 100 score, it makes me remember the materials. (S1)

Students also appreciated the format of the quizzes, which is mostly in the multiple choice format. Another student stated,

I find the quizzes fairly helpful and because they are in the multiple choice format, it makes things easier. (S5)

Some blended learning programs also use online quizzes as the pre-learning activity to create triggering events for students before a class, to probe students' conceptual understanding, and to identify individual learning needs (Garrison & Vaughan,

2008; Twigg, 2003; Thorne, 2003). Such quizzes for pre-reading are intended to enhance student engagement with the content, but in this present study, the quizzes were given after the classroom instructions.

Figure 2. A quiz on *Schoology*

Figure 2 is a screenshot of a quiz given on *Schoology*. Students could retake the quiz a few times to attain the highest score. The format of the quiz was mostly multiple choice.

3. Online writing assignments

When the course topics came to types of paragraphs, the lecturer assigned students to write a different type of paragraph every week after each face-to-face session. The writing assignments were done outside classroom time and submitted online on *Schoology* with the set deadline. This is one of the benefits of online learning that is the flexibility of being able to complete assignments anywhere and anytime (Garrison & Vaughan, 2008). Macdonald (2008) confirms that “online tools have changed our approaches to writing” (p.160). With the word processing tools, writing can be done faster and it is easier to revise when there is a mistake. It was confirmed by the students saying,

It saves time and is more practical because I can do the assignment online without having to submit the hardcopy. More importantly, doing the writing assignment weekly helps me improve my writing skills. (S3)

It is more convenient to do writing assignments online because I can do it through my phone while lying on my bed and the assignments really help me because by writing at home I have enough time to develop my writing and to imagine with my own writing. (S5)

The students' statements imply that submitting the writing assignments online was convenient and doing it outside of class time gives them plenty of time to generate ideas. Further, they admitted that having to do the writing assignments weekly help them improve their writing skills. It is in line with what Zemach and Islam (2007) stated that "learning to write well takes a lot of practice and patience" (P. iv).

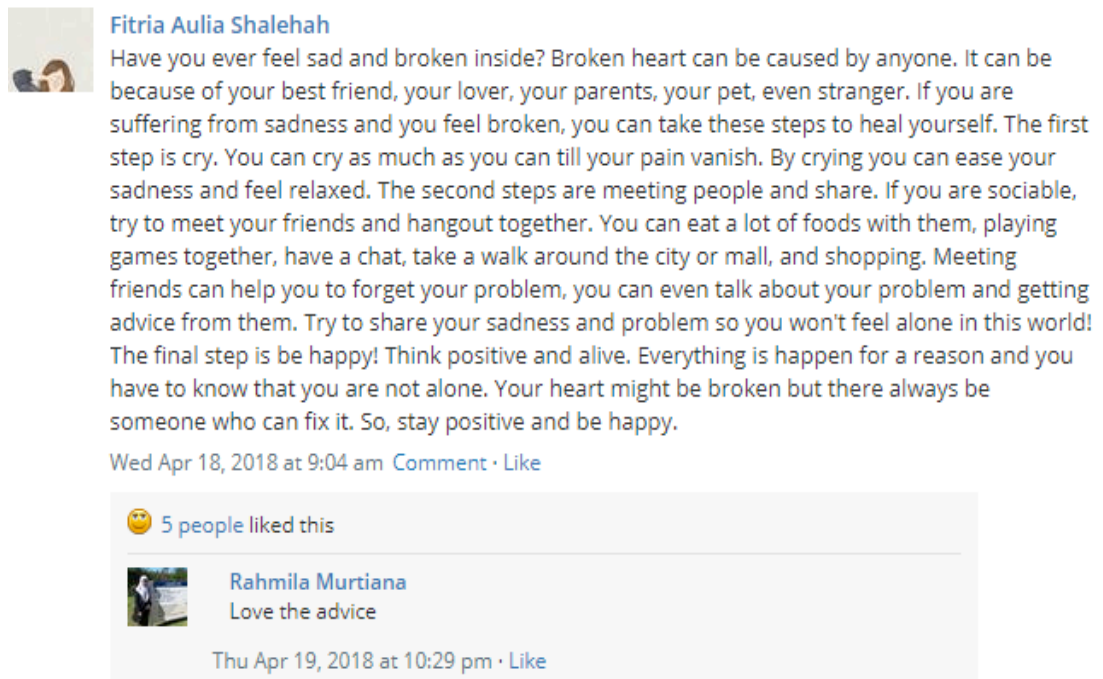


Figure 3. Online writing assignment

4. Displaying assignments online

The writing assignment actually could be submitted through "Submission" tool on *Schoology*, but the lecturer asked students to post their pieces of writing on "Updates" page where every student could see and read each other's piece of writing so that they could learn from each other and get motivated. Macdonald (2008) states that online tools offer new opportunities for drafting, sharing and presenting work. Students' responses to this activity were mixed; some said that they read their friends' work and it was helpful. One student said,

I can read my friends' pieces of writing, which helps me enrich my vocabulary because sometimes my friends use new vocabulary or rarely used words. I also learn new things including grammar. (S1)

However, some other students said that they never read her friend's work, as stated by one student,

I almost never read my friends' pieces of writing. (S4)

From these statements, it could be seen that several students seemingly analyzed their friends' work but some others only cared about submitting the assignments. The lecturer actually could have assigned students for peer feedback and made it

compulsory to encourage students to read their friends' work, or assigned students to give light and friendly comments on others' the way they did on social media. Figure 4 shows the interaction on *Schoology* indicating that students could learn as well as having fun by expressing themselves through writing and commenting.

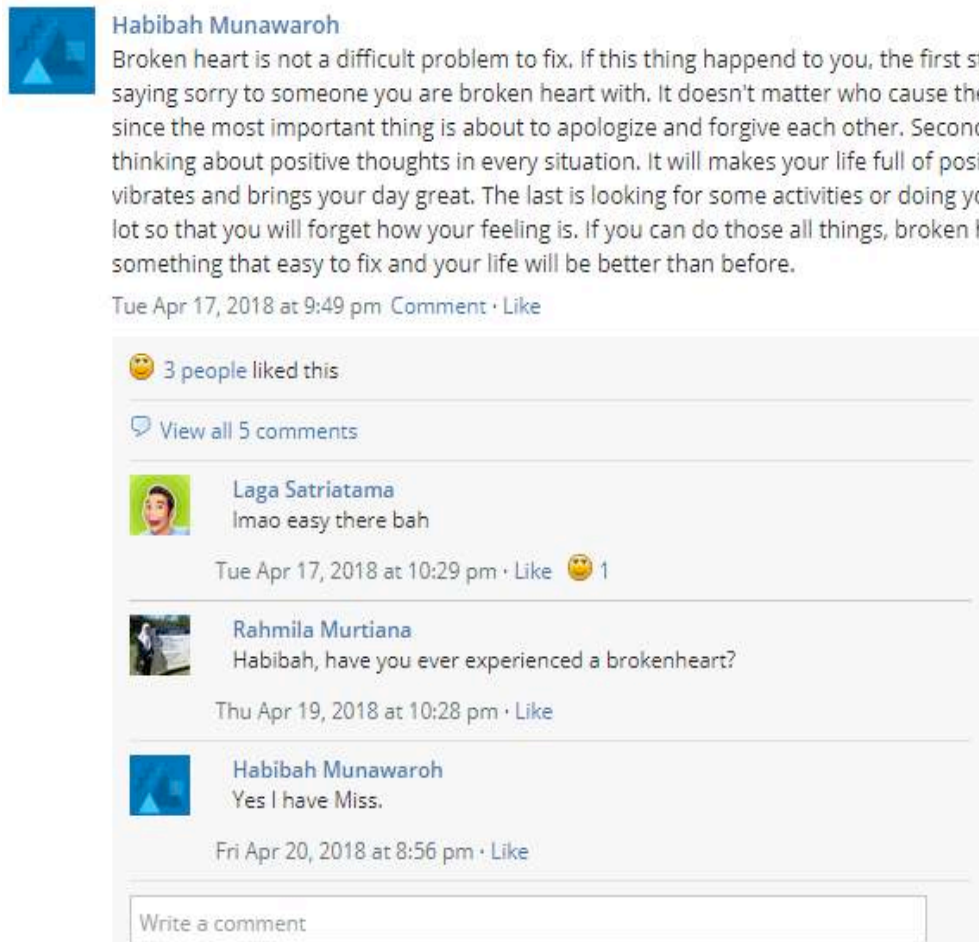


Figure 4. A screenshot of students' interactions on *Schoology*

5. Online feedback

The "Updates" page on *Schoology* has the interface like *Facebook* where the users can give comments on each other's posts. The lecturer suggested that students write comments on their friends' posts but not all of them seemed to obey the suggestion, yet some of them clicked the "like" button on their friends' posts. The lecturer passed comments on several students' pieces of writing as the feedback but the comments were not detailed because the main goal of displaying the students' work was to motivate students to write. Some students admitted that they were not actively getting involved in online feedback. One student said,

I only give feedback on my friends' pieces of writing by clicking "like" if I like the work. (S1)

Some others felt that their friends' feedback was trivial, seemingly hoping that they could get more meaningful feedback as conveyed by another student,

No elaborate comments given by my friends; only appraisal comments like “wow”. (S3)

Macdonald (2008) asserts that students can get feedback through peer review before hearing from the instructor. In this paragraph writing course, however, some students did not follow the lecturer’s suggestion to give feedback to their fellows’ work on *Schoology*. This is not surprising because several studies reveal that students dislike participating in online peer review (Jensen, 2016). Therefore, such an activity should be made compulsory to increase student participation and active involvement. The online feedback in this present study was mostly given by the lecturer as seen in Figure 5. The feedback could be used by students to revise their pieces of writing.

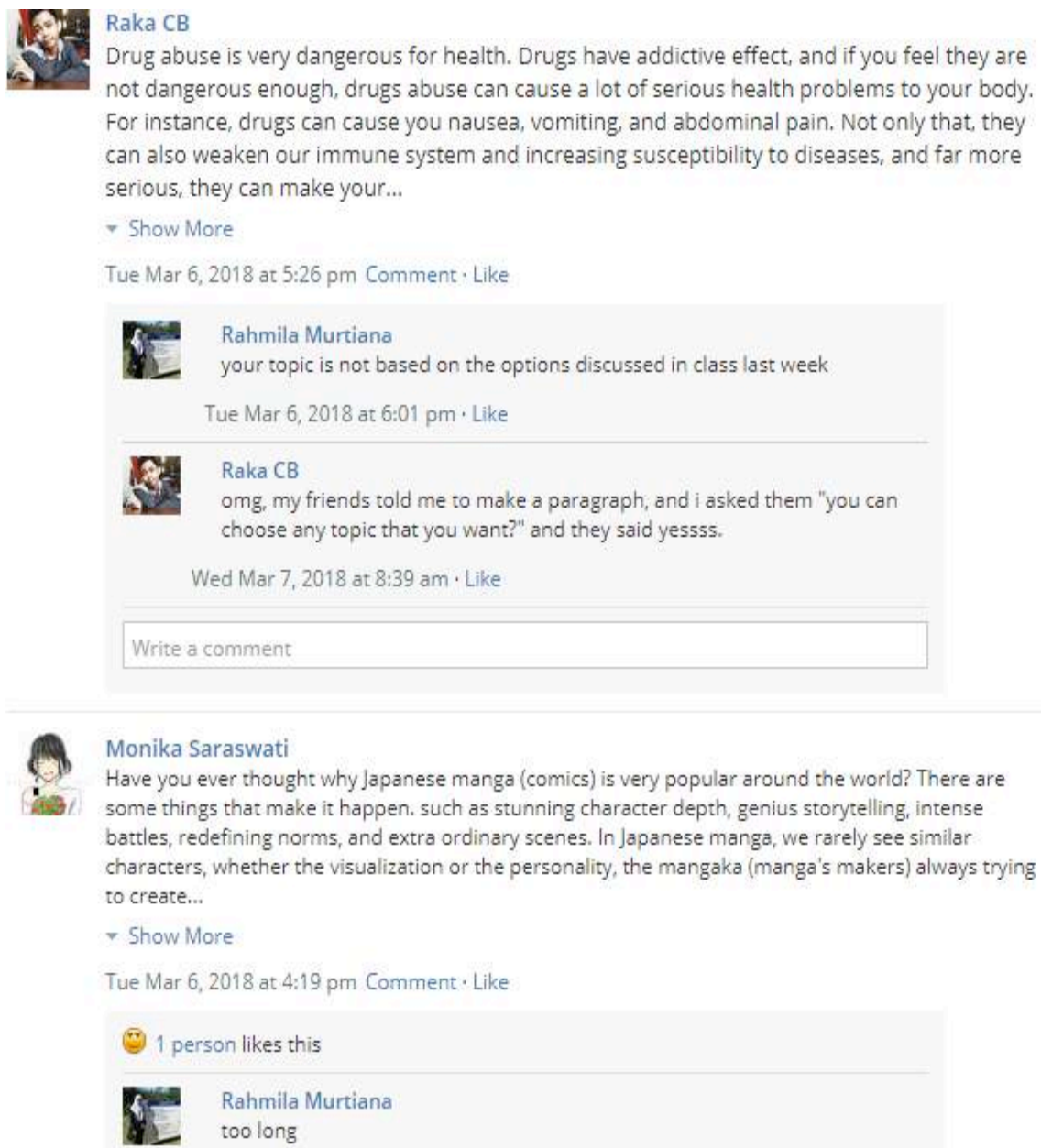


Figure 5. A screenshot of online feedback on *Schoology*

b. Face-to-face

1. Lecturing

In this paragraph writing course, the lecturer introduced a new topic, such as a new type of paragraph, by giving a short lecture about the concepts of the paragraph and proceeded to show a paragraph model for students to analyze to find the elements of the paragraph. Although Garrison and Vaughan (2008) claim that lecturing is not effective in engaging students in understanding a lot of information, Charlton (2006) suggests that lectures may be the best teaching method for delivering conceptual knowledge when a significant knowledge gap between the instructor and students needs to be solved. The responses from students were positive. Some students said,

My lecturer gives a brief lecture but mostly she shows the examples of a paragraph and how to write a paragraph. (S4)

The lectures delivered by my lecturer help me understand the material more deeply although all the materials are already uploaded on Schoology. (S5)

Indeed the time for lectures need be reduced because “interactive and collaborative learning experiences are more congruent with achieving higher-order learning outcomes” (Palloff & Pratt, 2005 as cited in Garrison & Vaughan, 2008). In blended learning settings lectures should be reduced and replaced with more interactive and collaborative learning experiences (Garrison & Vaughan, 2008).

2. Pair work and group work

Students were usually asked to work in pairs or groups to recognize a new type of a paragraph and to draw an outline from a model paragraph. The results were then discussed together. Still, in groups they were also asked to do the steps of the writing process (pre-writing) to produce their own paragraph. The outline resulted from the group work could be used as the outline for their individual writing assignments later on *Schoology*. Sansivero (2016) asserts that collaborative learning in small groups produces stronger solutions and encourages sharing for enhanced learning. Macdonald (2008) adds that group work increases the quality and quantity of interaction among students and with the instructors. Students showed mixed responses to this activity. Some said it is helpful but some others said it depended on the ones they worked with.

Doing the exercises together with friends is very helpful. My friends sometimes suggest ideas I never think about. (S1)

We can share ideas and it is nice to hear different thoughts from my friends' point views. (S5)

It depends on who you are working with. When my group mates are easy to work with and willing to contribute to the work, it would be beneficial. (S2)

Most of the exercises in the paragraph writing class were done in groups or in pairs for collaborative learning. Some activities performed in the work groups in this paragraph writing class included game-like activities, such as the paper-glue activity and chain writing. Although such game-like activities may look simple, they can be used to develop collaborative learning as well as generating fun among adult students. The teaching practices in blended learning are intended to establish the climate for collaborative learning (Garrison and Vaughan, 2008).

3. Class discussion

In introducing a new type of paragraph the lecturer showed a model paragraph to students and the students were asked to recognize and identify the paragraph for the topic sentence, supporting sentences, and concluding sentence. The results were then discussed together, and it helped students deepen their understanding. It is in line with what Twigg (2003) emphasizes that discussion sessions reinforce what students have learned and clear up the misconception. Moreover, the class discussions provide “opportunities for teachers to direct student exploration of a topic, and for students to test ideas, ask questions, and debate points” (Stein & Graham, 2014, p. 150). Some students stated the benefits of class discussion.

The discussions are usually carried out after group work and exercises. Through the discussions, we ask questions and deepen our understanding. (S1)

I can ask questions through discussions and find out the mistakes our group has made regarding the elements of a new paragraph. (S3)

Not all of my friends ask questions but the discussions over the results of our work clarify any misconceptions. (S6)

The class discussions in the paragraph writing course were usually carried out after class exercises or group work exploring the elements of a model paragraph. Such a learning method indicates an inductive learning approach which starts with examples and asks learners to find rules (BBC Teaching English, 2006). Prince and Felder (2007) explain that through an inductive approach the instructors present challenges for students to solve, enabling students to learn on their own. This approach leads to learner-centered learning, which is the core of blended learning.

4. Teacher-student conferencing

Teacher-student conferencing is a way of providing feedback by the lecturer to students on their writing assignments. The writing assignments previously posted on *Schoology* would be displayed in front of the class through a projector. The lecturer picked a few good paragraphs among students’ work as the samples of good pieces of writing, and for the paragraphs, with major mistakes, the lecturer usually asked the students to revise them. The lecturer provided feedback in general, not giving grades on the work. Garrison and Vaughan (2014) state that assigning grades can be demotivating, so it is better to give actionable feedback that students can apply to the next writing exercise. All student participants showed positive responses to this activity. Some students said,

Although my lecturer does not give feedback to all of our paragraphs, I can identify my mistakes by paying attention to the feedback given by my lecturer on several paragraphs of my friends’. (S3)

The feedback from my lecturer helps me see my own mistakes in writing so that I can make it better. (S5)

Hyland (2003) states that through face-to-face conferencing, the teachers have the opportunity to respond to their students’ diverse writing issues, save time because they do not have to mark students’ papers in detail, and assist students to see their strengths and weaknesses, develop autonomy skills, allow them to question the feedback, and help them develop revision skills.

5. Portfolio

All the tasks completed on *Schoology*, including quizzes and writing assignments, were asked to be recorded in a writing chart, and all pieces of writing that students posted on *Schoology* should be printed out as the portfolio at the end of the term. The portfolio in the paragraph writing course was intended to see and to assess the progress of students' paragraph writing skills. Students were also able to see their own progress. Hyland (2003) states that the aim of portfolios is "to obtain a more prolonged and accurate picture of students writing in more natural and less stressful contexts" (p. 234). Macdonald (2008) explains that "most portfolios are used to communicate and present a range of student work over a period of time" (p.140). Most student participants responded positively to this activity, stating that this made them more organized and able to see their progress in writing.

From the start, my lecturer has asked us to record our work in a writing chart, including the themes of work, dates, and notes. It teaches us to be more organized. (S1)

After I printed out the assignments and put them together, I can see my own writing from the very beginning. I think I have made some progress. (S4)

Nordquist (2018) describes a writing portfolio as a collection of student writing intended to present a student's writing development over the course, and it can be used as the student assessment. The student portfolios in this paragraph writing course were used as part of the summative assessment in addition to the results of the middle test and final test.

5. Conclusion

The blended learning activities in the paragraph writing course emphasized the active and collaborative learning experiences. The classroom time was mostly used for class discussion, group work, and teacher-student conferencing while still retaining brief lecturing as one of the teaching methods to introduce a new topic. The online learning focused on engaging students with the materials and reinforcing what was already learned in the classroom, such as uploading materials, providing quizzes, assigning writing assignments, displaying the assignments, and allowing online feedback. Some activities actually had the potential to be enhanced; for example, the online quizzes that can be given not only after the class meetings but also before the face-to-face instructions to increase student engagement with the content.

A few activities seemed not optimally performed; for instance, the space for online feedback was not optimized for peer review activity. It is, however, needs to be in accordance with the learning objectives and student needs in the course. In this paragraph writing course, the lecturer emphasized on helping students develop strategies for generating ideas through brainstorming and outlining, and then writing their paragraphs. The focus was on the writing process, so the lecturer did not give much corrective feedback on forms and did not assign students to complete a peer review. Moreover, the writing activities were intended to motivate students to write, so the feedback during the teacher-student conferencing was maintained constructive. The students' responses to the blended learning activities in the paragraph writing course were generally positive and the students showed their preferences for the combination of online and face-to-face learning rather than online or face-to-face learning alone.

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E-LEARNING UPTAKE AMONG ACADEMICIANS AND STUDENTS IN TANZANIAN UNIVERSITIES

Research Article

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Abstract

The purpose of this study was to ascertain the extent of current e-learning uptake in Tanzanian universities. The quantitative approach involving survey design was adopted in the collection of data. Data were collected through a questionnaire survey of 400 respondents, with a rate of return 85.5%. The average reliability of variables 0.949 was determined using Cronbach's Alpha. Fuzzy Logic model and t-test were adopted for data analysis. The findings revealed that the average extent of current e-learning uptake among students and academicians were less than half of threshold amounting to 50% (i.e. level of awareness was 16%, availability was 20.6%, accessibility was 17%, attitude was 15% as variables used). There was no statistically significant difference in e-learning uptake among students and academicians as the value of $p > 0.05$. The findings of this study established a base ground and guidelines to inform the e-learning stakeholders and policymakers to find and establish suitable policy as well as mechanism to adopt and encourage sustainable use of e-learning systems for life-long teaching and learning. The originality of this study is based on the addition of new variables and methodologies employed as empirical evidence based on the extent of e-learning uptake in Tanzanian universities.

Keyword: ICTs, e-learning uptake, fuzzy logic model, students, academicians

1. Introduction

Developments in the area of information and communication technology (ICTs) caused the establishment of educational technology particularly among higher learning institutions. Many universities all over the world have in one way or another adopted e-learning systems to enhance the provision of their programs. In Africa, there is evidence that many higher learning institutions have adopted some form of e-learning (Mtebe & Kissaka, 2015) although studies have reported low uptake of e-learning system in these institutions. For instance, Mayoka and Kyeyune (2012) reported that only 0.15% of students and academic staff used learning management systems (LMS) at Makerere University in Uganda. Similarly, less than 0.016% of students and academicians were reported to use LMS at the University of Nairobi in Kenya (Ssekakubo, Suleman, & Marsden, 2011). Only 0.11% of students and academicians were reported to use LMS at University of Zambia (Ssekakubo et al., 2011). In Tanzania, Mtebe (2014) reported the same that only 3.48% of students and academic staff used e-learning platforms at University of Dar es Salaam.



E-learning has the potential to improve the learning environment for students and to introduce modern modes with which teaching and learning can take place. E-learning technologies offer learners control over content, learning sequence, the pace of learning, time allowing them to tailor their experiences to meet their personal learning objectives (Jethro, Grace, & Thomas, 2012). Advancement of the mode of delivery, in relation to other factors, can impact on students' education performance, equips students' knowledge and skill, improve institutional productivity, and create new employment opportunities, among many students.

There are concerns that e-learning uptake has been explained and interpreted subjectively and further conquered by promises than reality (Jethro et al., 2012; Pinpathomrat, Gilbert & Willis, 2013). Most studies that have reported on the usage of e-learning have focused mainly on the availability of e-learning platforms and facilities to ascertain the e-learning uptake (Lwoga, 2012; Ssekakubo et al., 2011). Nevertheless, other critical variables to ascertain e-learning uptake such as attitudes, awareness, and accessibility of e-learning have been scarcely considered (Al-Alak & Alnawas, 2011; Kisanjara, 2014; Pinpathomrat et al., 2013). While there are many well-documented studies in e-learning employed various research methodologies, there is also an absence of appropriate and reliable research methodology employed to investigate the uncertainty phenomena of the extent of e-learning uptake in Tanzanian universities. In addition, previous studies in Tanzania were not based on empirically grounded evidence on e-learning uptake, and that is why they provided a subjective conclusion, which yet warrants further research on the topic (Lwoga, 2012). This study, therefore, ascertained the extent of current e-learning uptake in Tanzanian universities using fuzzy logic membership function as a stochastic model that handles uncertainties taking on board variables such as attitudes, awareness, accessibility, and availability of e-learning platforms and facilities. The study establishes a solid ground of current e-learning uptake in Tanzanian universities by providing factual based information using more than one variable including attitude, awareness, accessibility, and availability as explained in the related literature review.

2. Literature review

It is evident that the adoption of e-learning in the developing world has increased in the past few years. Scholars (Isaacs, Hollow, Akoh & Harper-Merrett, 2013; Mtebe & Raisamo, 2014; Ssekakubo et al., 2011) indicate that universities in Africa increasingly continue to adopt e-learning technologies. However, Ssekakubo et al. (2011) argue that the uptake of e-learning technologies is uncertain across Africa. According to this e-learning in Africa is used mainly as *add-on* functions both in campus-based and distance learning universities based on the availability of e-learning platforms and facilities. This is due to lack of understanding the current extent of e-learning uptake, differences in understanding of the e-learning concepts in relation to its application (Al-Alak & Alnawas, 2011). It is therefore vital to ascertain the extent of current e-learning uptake by considering more than one variable.

Attitude towards e-learning: attitude can be defined as a favourable or unfavourable factor, which depends on users' judgments when performing behavior towards a particular event or action. Attitude towards e-learning attributed to perceptions, personal and psychological factors influence the use of e-learning (Al-alak, 2011). Idris and Osman (2017) reported that the loss of control and qualities of e-learning systems were also attributes of attitudes towards e-learning. Fishbein and Ajzen (1975) assert that the most immediate precursor of motivation towards specific behavior is attitude, which is the function of

personal belief. Pinpathomrat et al. (2013) revealed that students and academicians attitude guaranteed to influence the e-learning uptake in the context of education.

Awareness of e-learning: awareness means having knowledge of the existence and usefulness of something (Ndinechi & Omoni, 2015). Awareness of e-learning among students and academicians is very important in encouragement intention to continue using the e-learning system. Variables used to measure the awareness of e-learning include e-learning confidence, training, knowledge of distance education for increasing the rate of e-learning accessibility (Weber, 1996).

Accessibility of e-learning (effort expectancy): accessibility as effort expectance is the extent to which users find it simple or hard to use technology. Accessibility in relation to e-learning means that; e-learning system should be accessible to a variety of users (Tarus & Gichayo, 2015). Arrigo (2005) showed variables such as usability of e-learning, pedagogic issues and student learning styles in addition to technical and resource issues have positive influence on e-learning usage.

Availability of facilitating conditions: facilitating condition is defined as the extent to which students and academicians perceive that the supports and commitments and e-learning infrastructures are in place to facilitate the uptake of e-learning facilities and platforms (Venkatesh, Morris, Davis, & Davis, 2003). Ndonje (2015) argues that availability of e-learning refers to facilities and platforms in place to ensure access to appropriate e-learning for all users and continue to provide for the development of their technical skills. Such facilities and platforms include computer hardware and software and other ICT

2.1. Current situation of E-learning in Tanzania

In many developing countries, Africa is one example where the adoption and usage of e-learning is at the infant stage. The rate of implementation of e-learning in Tanzania is still very slow despite the potential opportunities provided by open source technologies and the favourable environments created by the respective governments (Kisanjara, Tossy, Sife & Msanjila, 2017). Effort and initiatives have been made by the respective governments to establish and formulate ICT policy as a roadmap to implement e-learning technologies. Moreover, a number of roundtables conferences and establishment of the so-called Tanzania Commission of Universities (TCU) have been made to support and deliberate on the common new way of delivering education. In Tanzania for example, all taxes to acquire computers and related equipment have been eliminated. License fees, as well as royalties payable by the telecommunication operators, have been reduced too (McPherson & Nunes, 2005; Morrison & Khan, 2003). Specifically, in Tanzania, some of the universities have been taking initiatives to implement e-learning platforms and facilities on an ad-hoc basis. The implementations in these universities have been done by employing, for instance, WEBCT, Blackboard, Moodle, Joomla and so forth. However, other universities are at the infant stage of attempting to establish the ICT facilities and infrastructure including local area network implementation, Internet and building computer labs, in order to support the implementation of e-learning (Kisanjara, et al., 2017; Sife, Lwoga & Sanga, 2007). Thus, based on this situation students and academicians have been obligated to accept and use the so-called blended learning mode in teaching and learning. The blended learning mode is a practice of employing both online and face to face (f2f) learning (Tarus & Gichayo, 2015).

2.2. Conceptual model

A number of theories have been established to explain technology uptake and users' intention to use it. This study employed the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003) over other models and theories significantly to

explain the uptake of the e-learning system. The unified theory of acceptance and use of technology (UTAUT) has gained popularity in Information system (IS) studies and gives a hypothetical basis for studying usage of e-learning technology. UTAUT has been widely engaged and used to study acceptance and usage of IS/IT as argued by Dwivedi et al. (2011), where 43 empirical studies that employed UTAUT were meta-analysed. Diverse studies have employed UTAUT to study the acceptance and usage of e-learning in higher learning institutions across the world (Bhrommalee, 2012; Chen, Wu, & Yang, 2008; Fidani & Idrizi, 2012; Jairak, 2009; Ma & Yuen, 2011; Munguatosha, Muyinda, & Lubega, 2011; Padumadasa, 2012; Pardamean & Susanto, 2012). However, studies that have employed UTAUT to study the degree of current uptake of e-learning among students and academicians in Tanzania universities, in particular, are few. UTAUT incorporated views to significantly explain the e-learning uptake based on the following technology acceptance models and theories: Theory of Reasoned Action (TRA); Motivational Model (MM); Theory of Planned Behaviour (TPB); Technology Acceptance Model (TAM); Combined TAM and TPB (C-TAM-TPB); Model of PC Utilisation (MPCU); Innovation Diffusion Theory (IDT); and Social Cognitive Theory (SCT) (Venkatesh et al., 2003). UTAUT consists of four core variables that play a crucial role as direct influence user technology acceptance and usage behaviour these include: performance expectancy, effort expectancy, social influence, and facilitating conditions.

The conceptual model for this study depicted in Figure 1 was formulated based on modification of UTAUT and it consists of four constructs namely effort expectancy (Accessibility), facilitating conditions (availability of e-learning platforms and facilities), awareness and Attitude. The original UTAUT was modified by adding two other constructs (i.e. awareness and attitude) and removing two constructs (i.e. performance expectancy and social influence). In this study, awareness and attitude of the e-learning system were adopted from a theory of planned behavior (TPB) (Ajzen, 1991). These were included as a measure for e-learning uptake among students and academic staff in Tanzanian universities.

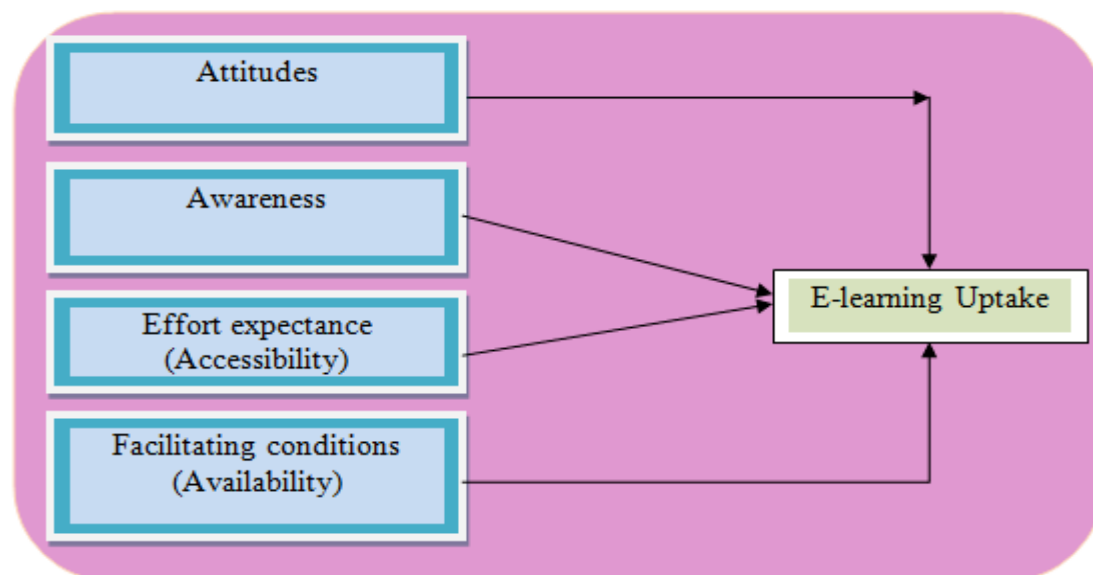


Figure 1. A modified conceptual model (Venkantesh et al., 2003)

Ascertaining the extent of uptake of e-learning among students and academicians in Tanzanian universities in this study has great significance. First, the study findings provide information about the status of current e-learning with facts in order to provide key information among universities to make a decision based on the total investment made. In the

same way, the study provides knowledge and guidelines that may be of help to policymakers. This study provides an input to stakeholders and researchers in the areas of e-learning.

Research works are embarked upon with a view to extending the frontier of knowledge. The present study was therefore carried out with this same purpose, especially in the field of e-learning. It has, therefore, contributed to the extension of the frontier of knowledge as follows. The study has shown the predictive power of extending the variables and methodologies employed as empirical evidence based on the extent of current e-learning uptake in Tanzanian universities. Thus, this study ascertained the extent of e-learning uptake among students and academicians in Tanzanian universities. The following were the specific research questions of the study:

- (1) To what extent do awareness among students and academicians influence e-learning uptake level?
- (2) To what extent do attitude among students and academicians influence e-learning uptake level?
- (3) To what extent do accessibility among students and academicians influence e-learning uptake level?
- (4) To what extent do availability of e-learning facilities and platforms influence e-learning uptake level?

3. Methodology

3.1. Setting and participants

This study was carried out in eight public and private universities purposively selected from among 30 universities in Tanzania. These were the University of Dar-es Salaam, Sokoine University of Agriculture, State University of Zanzibar, University of Zanzibar, University of Iringa, the Open University of Tanzania, St. Joseph University of Tanzania and Mbeya University of Science and Technology. These are the Universities which have invested in ICT infrastructure and have implemented similar e-learning platforms and facilities to enhance its teaching and learning activities. The use of purposive sampling technique was to ensure selection of a sample of universities with characteristics based on the nature of this study and gather a large amount of information enabled a researcher to generalise the findings. Such characteristics include; nature of the university (such as biological sciences, social sciences, technology and comprehensive). Other characteristics include mode of delivery (campus-based and distance learning), geographical location (urban and rural), age (old and new) and ownership (private and public). These eight universities had a total population of 58, 000 and 6,896 students and academic staff respectively.

3.2. Sampling procedure and sample size

Proportional stratified sampling technique was used to stratify a sample of 400 of students and academia to their subgroups as indicated in Table 1. This study also employed simple random sampling technique to obtain students and academic staff differently from their subgroups with specific size using lottery method. Each member of their subgroups was assigned a number using small piece of paper. These pieces of papers were folded and mixed into a box. Lastly, samples were taken randomly from the box by choosing folded piece of paper in a random manner. The simple random sampling particularly the lottery method was employed in this study in order to minimize bias from selection procedure and resulted in representative sample. In addition, the population was divided into subgroups in which the lottery method was reliable compared to computer-generated process (random number generator software) (Saunders, Lewis & Thornhill, 2012)

The sample size of each sub-group was proportionate to the population size of the disjoint groups. The sample size of each subgroup was determined by the equation: $n_h = (N_h / N) * n$. Where n_h is the sample size of the sub-group h , N_h is the population size for the sub-group h , N is the total population size and n is the total sample size adopted from similar existing studies (Trochim, 2006).

Table 1. Study population and sample size

CATEGORY						
UNIVERSITY	STUDENTS		ACADEMIC STAFF		Total Population	Total Sample Size
	Population	Sample Size	Population	Sample Size		
	UDSM	17,500	103	2350	18	19,850
SUA	8,988	53	1500	13	10,488	69
OUT	10,684	63	663	5	11,347	68
SJUT	4,883	29	400	3	5,283	31
UOI	5786	34	850	7	6,636	41
SUZA	2,704	16	330	3	3034	19
ZU	2,544	15	300	3	2,844	18
MUST	4,909	29	503	4	5,412	33
TOTAL	58,000	342	6,896	58	64,896	400

3.2. Data collection instruments

Data were collected using a structured questionnaire that contained scales to measure e-learning uptake with items ranging from 1 (Strongly disagree) to 5 (Strongly agree). A total of 342 (291 for students and 58 for academic staff) questionnaires were received back which was a response rate of 85.5%.

3.3. Validity and reliability

To determine the reliability and validity of the study, a pilot study was undertaken at Mzumbe University in Morogoro using a sample of 30 respondents. The reliability of each variable was determined using Cronbach's Alpha. The Cronbach's Alpha values were calculated using Predictive Analytic Software and the score was found to be 0.949 which is acceptable (Krishnan & Ramasamy, 2011). In ensuring the validity of the variables, the items of the questionnaire were ranked against a review of related literature (theoretical and empirical).

3.4. Data analysis

The collected data were processed and analysed using the (PASW). Descriptive analysis was done to obtain the demographic characteristics of respondents as well as means and standard deviations. The t-test analysis technique was employed to test whether differences in mean scores were statistically significant. The means and standard deviations were subsequently analysed using a fuzzy logic model. Fuzzy Logic (FL) is a multivalued logic that allows intermediate values to be defined between conventional evaluations like

true/false, yes/no, high/low, etc. Fuzzy systems are an alternative to traditional notions of set membership and logic that has its origins in ancient Greek philosophy (Hellmann, 2002). The fuzzy membership function adopted model in this paper can be specified as follows.

$$\mu_x(x) = \begin{cases} 0: Y(x) \leq 3.60 \\ 0.05 + [1 + ((Y(x) - 3.6)/\text{Stdev})^2]^{-1} \dots Y(x) \geq 3.60 \end{cases}$$

Where, $\mu_x(x)$ is a membership function, the mean value $Y(x)$ and Standard deviations (Stdev) were calculated descriptively using the PASW analytical tool. The value of membership functions were generated from SPSS software using the model above. These values were the extent of e-learning uptake in percentages per each variable measured as indicated in Table 2 for students and academic staff.

3.5. Characteristics of respondents

The study findings show that there were more male students 193(66%) and academic staff 46(79.3%) than females. This is usual since the male enrolment rate in Tanzanian universities is often higher than that of the female. With regard to the area of specialisation, findings show that the survey sample was more dominated by students in social sciences 100(34%) followed by biological science 70(24%). In terms of academic staff, more were those teaching IT/Computer science 18(31%) followed by those teaching arts and social sciences 15(25.9%).

4. Results and discussion

4.1. The extent of e-learning uptake

Based on the fuzzy logic model, mean and standard deviations of each variable calculated descriptively were used to estimate the membership functions in terms of percentage. The threshold of the extent of e-learning uptake based on the model is amounting to 50% implying that the extent of e-learning uptake is high if $x \geq 50\%$, otherwise is low (Alshaher, 2014). These values indicate the level of e-learning uptake for each variable measured on students and academicians in Table 2. The comparison of the average means for e-learning uptake among students and academicians are presented in Table 3 and Table 4 showing the results of t-test analysis to reveal whether differences in mean scores of e-learning uptake among the two groups are statistically significant.

The findings show that all fuzzy logic values were below 50%. This suggests that there is a low level of e-learning uptake among students and academic staff in Tanzanian universities. The average e-learning uptake among students and academicians were found to be 16% for awareness, 20.6% for accessibility, 17% for availability and 15% for attitude towards e-learning. It is deduced from the findings that the least variable was the attitude towards e-learning which got the average extent closer to a quarter of the threshold (50%) while accessibility of e-learning is above a quarter of the cutting fuzzy logic values amounting to 50%.

Table 2. Results of the Fuzzy Logic analysis for each factor

Variables	STUDENTS			ACADEMICIANS			AVERAGE OF UPTAKE LEVEL
	Mean	Standard Deviation	Uptake Level in%	Mean	Std Deviation	Uptake Level in%	
Awareness of E-learning							
Awareness on computer usage	4.23	0.88	39.00	3.98	1.00	18.00	28.50
Flexibility using e-learning	4.01	0.97	20.00	3.62	1.14	5.00	12.50
Online academic materials	4.08	0.93	26.00	3.55	1.14	5.00	15.50
Participation on online courses	3.64	1.08	5.00	3.97	0.88	20.00	12.50
Online library resources	3.07	1.36	18.00	3.53	1.31	5.00	11.50
Average	3.81	0.83	22.00	3.73	1.09	10.00	16.00
Accessibility of E-learning							
Easy access to computers	4.10	1.14	21.00	3.76	1.13	7.00	14.00
Access to computer internet	4.04	1.10	19.00	3.88	0.94	13.00	16.00
Access to online time table	3.93	1.21	12.00	3.53	1.03	5.00	8.50
Submit & receive feedback on online assignments	3.47	1.40	6.00	3.55	1.26	5.00	5.50
Access university info. Online	4.38	0.99	43.00	2.64	1.25	42.00	42.50
Online academic results	4.59	0.82	64.00	3.78	1.11	8.00	36.00
Average	4.09	1.11	28.00	3.52	1.12	13.30	20.60
Availability of E-learning							
Functioning Computer labs	3.68	1.30	5.00	3.12	1.11	21.00	13.00
Internet connectivity	3.86	1.09	10.00	4.24	0.68	52.00	31.00
Online group discussion	3.13	1.32	16.00	3.88	1.29	10.00	13.00
Online assign and exams	3.41	1.30	7.00	3.07	1.32	19.00	13.00
Online materials from instructors	2.78	1.37	32.00	3.66	1.31	5.00	18.50
Online library resources	3.73	1.20	6.00	3.40	1.42	19.00	12.50
Average	3.43	1.05	13.00	3.56	1.14	21.00	17.00
Attitude towards E-learning							
Experience using e-learning	4.18	1.01	30.00	3.34	1.19	10.00	20.00
Perception using e-learning	3.95	1.04	15.00	3.84	4.19	5.00	10.00
Preference on e-learning	3.76	1.05	7.00	3.78	1.08	8.00	6.5.00
E-learning enhances practice	4.03	0.99	21.00	3.91	0.96	14.00	17.50
Usefulness of e-learning	4.08	1.05	22	3.97	0.92	19.00	20.5
Average	4.00	1.03	19	3.77	1.67	11.00	15.00

4.1.1. Awareness of e-learning

The study findings in Table 2 show that the average e-learning uptake level among students and academicians is 16%. Students were aware of computer usage by 39% followed by online academic materials by 26%. Academicians were aware of online courses by 20% followed by awareness of computer usage by 18%. These findings suggest that, yet the average level of e-learning uptake on the aspect of students and academicians' awareness towards e-learning is below the threshold of the cutting fuzzy value, amounting to 50%. With this, there is an evidence of low extent of e-learning uptake in terms of awareness in most of students and academic staff. The study findings revealed that, awareness of e-learning is very crucial factor in e-learning implementation for successful uptake among students and academic staff. The other way round in improving e-learning uptake would be to give appropriate training among students and lecturers on the importance of employing the e-learning technologies in their activities (Njenga, 2011; Taha, 2014). Awareness among university students and academic staff can be established using printed leaflets, posters, university web site, social media, and library catalogues (Lwoga & Komba, 2015).

Despite the importance of awareness among students and academic staff, the study findings indicate that the average of the extent of current e-learning uptake among students and academic staff is low. This situation has been due to lack of clear descriptions of benefits and usefulness as well as functions and knowledge on how to use e-learning among e-learning users before applying the technology and this is similar to the previous study by Kayoed, Ekwunife & Tian-Lih (2014). In line with these findings, some students knowledge, experience, training, and accessibility on using the technology in relation to online courses; some of them have no confidence in using the technology in education (Weber, 1996). Therefore, from these findings, students' and academic staffs' awareness need to be created prior to e-learning implementation. User skills, training, and participation on how to use e-learning facilities and platforms are essential for users to deal with e-learning environment; in turn, they increase the attitude and hence increase the accessibility and frequency of usage.

4.1.2. Accessibility of e-learning

The results in Table 2 show that the average extent of e-learning among students and academicians staff was 20.6% for accessibility of e-learning. It is deduced from the findings that students use e-learning more to access online academic results by 64% above the threshold cutting of fuzzy logic value than access online information by 43%. On the other hand, academicians had more access to online information by 42% above half of the threshold compared to the rest variables. Based on these findings, it is indicated that the average extent of e-learning accessibility among both student and academicians is lower than the threshold. The findings of this study in relation to previous studies revealed that e-learning accessibility has the significant influence on the extent of e-learning uptake (Taha, 2014; Tarus & Gichayo, 2015; Zhu & Mugenyi, 2015). This has been noted in developing countries especially Tanzania, Kenya and Uganda where factors of e-learning implementation rely on computer and Internet accessibility (Zhu & Mugenyi, 2015).

Despite the importance of e-learning accessibility revealed in various study towards e-learning accessibility, the average extent of e-learning accessibility among students and academic staff is still low. In line with the study conducted by Kisanjara (2014), the findings show that 97.5% of students responded negatively saying that they have inefficiencies of online printers which are connected directly to their computers. Furthermore, 70% of the students responded negatively on the assessment by saying they do not have access to the computer with necessary software installed as well as internet connectivity. Studies by Idris and Osman (2017) and Hew and Kadir (2016) support this by saying that, in developing

countries, most students and academic staffs do not have their own computers. Cheok (2017) found that 80% of the teachers used ICT less than one hour per week, and this was also mostly limited to word-processing. Similarly, the study by Papadakis and Kalogiannakis (2017) highlighted that e-learning platforms present usability and compatibility problems while users trying to access websites meant for desktop or laptop computers. Difficulty in access to computers affects negatively the e-learning uptake. It has been reported that unequal access to online teaching and learning leads to inequality among the socio-economic groups within the society (Idris & Osman, 2017).

Similar to the findings of this study which declared that despite the effort made to implement various e-learning solutions in Africa universities their extent of e-learning accessibility is reported to be low across the continent (Ssekakubo et al., 2011). For instance, Internet speed and reliable access, as well as limited ICT and e-learning infrastructure which lead to lack of access to e-learning, are also critical factors in this context (Othman & Musa, 2012; Tarus & Gichayo, 2015). Despite the low extent uptake of e-learning revealed among both students and academicians, however, there is an interrelationship between learning and accessible e-learning facilities and platforms as shown in the current study findings. For instance, the findings of the current study revealed more extent of e-learning uptake (28%) among students compared to that of academicians by 13%. According to the study by Zayat (2016), it is evidenced the same that, though the majority of students (nearly 85%) who have access to the internet enabled PCs in the interview study sample said they believed there is an interrelationship between learning and accessible e-learning. It is concluded from these findings that, if Tanzanian universities are to implement and adopt e-learning a lot of improvement is needed for the accessibility of ICT and e-learning infrastructure to ensure success at the high level of e-learning in the context of teaching and learning.

4.1.3. Availability of e-learning

The availability of e-learning platforms and facilities has an average uptake level of 17%. The findings in Table 2 show that availability of functioning computer laboratories (5%) and online library (6%) had very low average uptake among students. The availability of internet connectivity is found to be 52% above the threshold of fuzzy logic value followed by the availability of functioning computer laboratories (21%) among academicians. Previous studies in line with the findings of this study have indicated that availability of ICT facilities including e-learning facilities and platforms play a vital role in uplifting e-learning implementation by increasing the extent of e-learning uptake for successful teaching and learning process (Cheok, 2017; Tarus & Gichayo, 2015; Zhu & Mugenyi, 2015). The availability and setting up the required ICT infrastructure including e-learning facilities and platforms terrify e-learning uptake success.

Regardless of the notable role of availability of e-learning facilities and platform, for successful e-learning uptake, the findings of this study revealed that there is the inadequacy of e-learning platforms and facilities in most Tanzanian universities. This is due to the fact that e-learning implementation was done in the universities on an ad-hoc basis. The inadequacy of e-learning platforms and facilities is found to influence the status of e-learning by lowering the extent of its uptake among students and academic staff. It is found that e-learning facilities and platforms were there but not working properly. This situation has been discouraging students and academicians from e-learning usage. In the same story, for example, factors revealed in other studies that facilitate effective web-based LMS usage as mentioned by the respondents include stable internet connectivity, availability of functioning desktop computers and laptops to faculty and students (Lwoga & Komba, 2015). The study by Tarus and Gichayo (2015) and that of Zhu and Mugenyi (2015) agree with the findings of

this study that, developing countries like Kenya, Tanzania and Uganda still face a lot of challenges such as inadequacy of ICT facilities and platforms while implementing e-learning for high extent of uptake.

In contrast with these findings, the study by Munguatosha et al. (2011) contends that, in Tanzania, almost 80% of the relevant institutions had installed various e-learning systems by the end of 2011 which ensure the availability of e-learning facilities. The question is “are these e-facilities and platforms implemented adequately for sustainable and high uptake among students and academicians?” Based on the findings of this study the answer to such question is definitely not. Munguatosha et al. (2011) argued against the findings of this study in the sense that the previous study lack empirical evidence from e-learning users in Tanzanian universities as explained subjectively. Thus, the findings from this study in Table 2 indicate that inadequacy of e-learning facilities and platforms have a negative influence on e-learning uptake. This study used a stochastic model to ascertain the extent of uptake of e-learning in terms of availability of e-learning facilities and platforms as it is observed to be uncertain in Tanzanian universities. These findings suggest that the role of e-learning facilities and platforms would help users and decision makers to implement and increase high uptake of e-learning in the near future. Therefore, it can be concluded with no doubt that successful implementation of e-learning is influenced by the adequacy of e-learning facilities and platforms which in turn ensure high level e-learning uptake.

4.1.4. Attitudes towards e-learning

The average uptake level among students’ and academicians’ attitude towards e-learning was 15%. The study findings in Table 2 show that students experience in using e-learning had uptake level of 30% followed by usefulness of using e-learning (22%). Surprisingly, academicians’ perception (8%) and preferences (5%) in using e-learning were found to be extremely low. This shows that, there is a low attitude towards using e-learning platforms and facilities among students and academicians.

The findings of this study indicate that students’ and academic staff’s attitudes influence extent of e-learning uptake. The extent of e-learning uptake revealed among students and academicians is 15% based on their attitude towards e-learning usage. The findings of this study have also supported the previous studies such as Fageeh (2011) and Zewayed (2012). Fageeh (2011) points out the same that students’ and academic staff’s attitudes towards e-learning influences the level of e-learning uptake particularly in teaching and learning process and also established users’ readiness for accepting and using e-learning as a mode of learning and delivery. The low level of e-learning uptake among students and academic staff was due to the fact that, other academic staff have a negative attitude in essence that they are afraid of losing control and quality of teaching if they use e-learning platforms and facilities (Idris and Osman, 2017).

In addition, the findings told a similar story and showed that low extent of e-learning is caused by lack of e-learning resources, perception and preferences in using e-learning in various universities that could help students and academic staff to have positive attitude towards e-learning. Further the study by Idris and Osman (2017) insists that lack of experience in using e-learning platforms and facilities results into negative attitude among e-learning users. Similar to these findings, Robertson et al. 1996 point out that user perceptions, experience and usefulness of e-learning were factors that were found to influence users’ attitude towards using e-learning for attaining higher extent of e-learning uptake in education context. These findings suggest that the role of students’ and academic staffs’ attitudes towards e-learning would help users and decision maker to implement and develop successfully e-learning. Therefore, it can sensibly be said that high extent of e-learning

uptake and its successful implementation are influenced by the students' and academic staffs' attitudes such as experience, preference, usefulness and perceptions which are very crucial.

In general, the finding of this study have revealed low e-learning uptake among students, academic staff and management. There is no statistical difference in e-learning uptake among the respondents. These findings correlate with the findings from a study by Ndonje (2015) who revealed that there is no statistical difference in e-learning usage implemented in their Tanzanian universities among students and academicians. In contrast with the findings of this study the earlier study by Taha (2014) revealed that there is a statistically significant difference between students and academic staff in their perceptions when it comes to usage of e-learning implemented in their universities. The findings of Taha (2014) are against in the sense that they were based on subjective opinions from students and academic staff lacking factual based data.

4.2. Comparison of e-learning uptake among academicians and students

A t-test was conducted to assess whether the e-learning uptake ascertained and discussed in the previous paragraphs is different among students and academicians. Prior to running the t-test, means of e-learning uptake for each group were compared based on five (5) Likert scales. Using frequencies, the items each with a range of 1 to 5 combined together with data that was generally converted the ordinal measures into metric data for parametric tests. The average means of e-learning uptake for students and academicians separately from each variable are indicated in Table 3. The results show that there was a no significant difference in the scores for students (M=3.8, SD=1.0) and academicians (M=3.6, SD=1.0). The findings suggest that the mean scores for the two different groups of e-learning users are close to each other. This implies that there is no statistically significant difference in means of students and academicians.

Table 3. Means for e-learning uptake among students and academicians

Students and Academic Staff	<i>n</i>	<i>M</i>	<i>SD</i>	Std. Error Mean
Students	4	3.832	1.000	0.13573
Academic Staff	4	3.645	1.000	0.13573

Parametric tests, namely independent t-test was employed with p-value in order to quantify the idea of the statistical significance of evidence to whether differences in mean scores of e-learning uptake between these two groups are statistically significant. This is based on data collected from students and academician who are using e-learning facilities and platforms implemented in their universities. There was no statistically significant difference in the mean scores for students (M=3.8, SD=1.0) and academic staff (M=3.6, SD=1.0) conditions; $t(16) = -2.35$, $p = 0.23$. The result indicates that $p > 0.05$, it suggests that e-learning really has been used equally among students and academicians. Specifically, our findings suggest that students and academicians have interrelated activities in the teaching and learning process. This has been caused by e-learning uptake among students and academicians assessed in terms of more than one variable such as awareness, accessibility, availability, and attitudes.

Table 4. *Independent samples t-test*

	Levene's Test for Equality of Variances				t-test for Equality of Means		
	<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	Mean Difference	Std Error Diff.
Equal variances assumed	0.000	1.000	-2.35	16.000	0.23	-0.187	0.04675
Equal variances not assumed			-2.35	16.000	0.23	-0.187	0.04675

5. Conclusion and recommendations

5.1. Conclusion

E-learning plays a vital role in teaching and learning. For instance, it permits greater learner interactivity and promotes learners' efficiency, motivation, cognitive effectiveness, and flexibility of learning style context. Additionally, e-learning is a channel and tool through which teachers can improve their teaching styles through innovation, efficient, time-saving, flexibility and just to mention a few. E-learning provides academicians and students in learning context with liable and easy modes of delivery, thereby increasing their ability to access course material and learn anywhere and anytime to overcome traditional learning. E-learning presents an entirely new teaching and learning environment for academicians and students and, thus requiring positive user perceptions for successful uptake. However, the use of e-learning among students and academicians is not promising in Tanzanian universities. Lack of awareness and attitudes among students and academicians is a causal factor. Inadequate and accessible e-learning facilities and platforms discourage students and academicians from using e-learning effectively in teaching and learning context.

The findings of this study have shown that e-learning uptake in Tanzania universities is low among students and academicians. The low uptake of e-learning among academicians and students was ascertained using variables such as awareness, attitude, accessibility and availability. The extent of e-learning uptake in each variable observed to be below the fuzzy logic membership function value amounting to 50%. Despite the low e-learning uptake in Tanzanian universities, the findings in this study have shown that there is no statistically significant difference of e-learning uptake among students and academicians. This indicates that e-learning in Tanzania have been adopted without taking onboard more than one variable. First creating awareness could increase the accessibility and raise positive attitude towards e-learning among students and academicians. Awareness increases users' ability to access the available e-learning facilities and platforms effectively and efficiently thereby increasing productivity in teaching and learning. Secondly, availability of e-learning platforms and facilities encourage and motivate e-learning users by creating positive attitude among them. Thirdly, the higher the accessibility of e-learning platforms and facilities the higher the attitude towards e-learning, which in turn encourages the management to improve and increase availability of e-learning infrastructures. Therefore, these variables are interdependent and must be considered together when ascertaining the extent of e-learning uptake.

5.2. Recommendations

On the basis of the findings above, this paper recommends the followings: First, the Universities in Tanzania should take a serious move to create awareness and sensitisation of users on e-learning facilities and platforms prior to applying it in teaching and learning. For

instance, universities should create awareness to students and academicians through printed leaflets, posters, university web site, social media, and library catalogues. Secondly, benefits of e-learning in relation to individual and organizational impact need to be explained during e-learning training. In other countries for instance, France and German, this has been done to address managers and those who are interested in implementing e-learning in education context through training and capacity-development. Thirdly, universities should also provide detailed guidance to academicians on creating interactive e-content. The University of Tanzania should also ensure that e-learning facilities and platforms as well as ICT infrastructures are in place and working properly to increase accessibility. Fourth, so long as the application of e-learning is still low there should be a regular evaluation on the extent of uptake of e-learning in developing countries including Tanzania in order to realise where we are and where are we going for competitive advantages in provision of quality education. Lastly, further researches need to be done by adding new variable from social and environmental contexts to extend the proposed conceptual model in ascertaining the extent of uptake of e-learning in universities.

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THE EFFECT OF INQUIRY-BASED SCIENCE ACTIVITIES ON PROSPECTIVE SCIENCE TEACHERS' SCIENTIFIC PROCESS SKILLS

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THE EFFECT OF INQUIRY-BASED SCIENCE ACTIVITIES ON PROSPECTIVE SCIENCE TEACHERS' SCIENTIFIC PROCESS SKILLS

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Abstract

Inquiry skill is the most important factor in the development of the scientific processes of prospective science teachers. The objective of this study is to research the effect of using inquiry-based activities on the development of scientific process skills of prospective science teachers. The research group of the study consists of students studying in their third year of science teaching department at Ordu University (n=32). Inquiry-based activities were conducted on prospective teachers for three months within the nature of the science course. Mixed research design, which uses quantitative and qualitative research methods together, was used in this study. As the quantitative data collection tool, a 36-item of scientific process skills scale, which had Cronbach Alpha internal consistency coefficient of .70, was used as pre-test-post-test. SPSS 17 program was used for data analysis and "t-test for dependent samples" was conducted. In the qualitative part of our research, "content analysis" approach was used. Descriptive analysis was conducted on the content of interviews with prospective teachers and observation reports. It was concluded through quantitative and qualitative research analyses that inquiry-based science activities significantly increased scientific process skills of prospective science teachers positively. It is recommended that researchers who conduct studies to increase scientific process skills should use inquiry-based activities.

Keywords: inquiry, nature of science, science education, scientific process skills.

1. Introduction

Science education for the development of an individual's mental process skills requires active participation in the process. The most important factor in science education is an inquiry. Inquiry-based science education enables the individual to form positive attitudes towards learning while developing the learning skills of an individual (Karamustafaoğlu & Havuz, 2016). Inquiry-based education approach has taken its place among teaching programs with a recently increasing significance. Research-inquiry teaching approach has a very significant place for science subjects which do not mean anything when memorized. The first reflections of this significance can be seen in science and technology lesson teaching program, which was revised in 2013. Instead of the previous program which included predominantly constructivist teaching model principles and strategies, research-inquiry based teaching approach was adapted. In the updated curriculum, teachers were asked to prepare activities suitable for research-inquiry based teaching approach and to apply these in their lessons (MoNE, 2013). It can be seen that a multi-disciplinary approach is adapted in the science lesson teaching program, which was last updated in 2018, and research and inquiry-based learning strategy is used as a base. Media which will enable students to learn information significantly and

permanently are recommended to be designed on the basis of research-inquiry strategy. In creating this kind of media, it is also predicted to make use of extracurricular informal learning media (MoNE, 2018).

The Researches based on questioning highlight that questioning skills are the starting point of individual development leading to higher success (Kim, 2011; Quigley et al., 2011; Lee & Buxton 2013). It is reported that the applications based on research and questioning contribute the development of science success, lab and cognitive skills of the students in a positive way (Palmer, 2009; Bulunuz et al., 2012; Baker, 2013; Lee & Buxton, 2013; Kim, 2016). In this study, it is emphasized that students should actively be included in the process to reach the success of the questioning based on education. Psychologists and pedagogues agree on the idea that active participation of the students to the educational activities plays an effective role in academic success (Freeman et al., 2014; Lazonder & Harmsen, 2016). However, the question of how the students participate in the learning process is still on the agenda. The questioning abilities of the students should be improved to take part in the process actively. The methods based on questioning provide learning of the students about the subject through self-directional questioning. "By questioning as a scientist", the students can not only learn scientific knowledge but also scientific events existing across the world (International Science Benchmarking Report, 2010).

There exists questioning in sciences and the students should have enough information about how they question the data. The activities and events would be beneficial to make the skills gain. The teachers-guided activities should be well-planned. Inquiry-based learning is a process in which students develop research questions and create solutions with different methods and discuss. During this process, students are expected to analyze events or phenomena not by through rote learning, but by using critical thinking and scientific process skills actively (Zacharia, 2003). It will be useful to conduct inquiry-based activities to develop such skills. Individual competences and learning levels of the students should be considered in creating the questioning based activities (Kim, 2016). In the case of ignoring the issue, the level of the activities can lead to being quite tough or easy. At this point, the teacher competences appear on the forward. For this reason, the practice-based lesson should be provided to the teacher candidates during university education.

Inquiry-based activities can be developed on different levels based on teacher and student interactions. In the first of these, students use the question and process given by the teacher during a process called a structured inquiry. In the second situation called a guided inquiry, students conduct the process and solution of the question given by the teacher. Another one is called an open inquiry and students form the research question and conduct the process and the solution on their own (NRC, 2000; Sadeh & Zion, 2012; Bayram, 2015). The level of inquiry-based activities can be organized according to students' levels. In all inquiry activities, students need to use the arguments of the nature of science. Using scientific processes comes to the forefront for inquiry-based activities to reach their goal. Inquiry-based learning environments also develop students' scientific process skills and abilities (Wu & Krajcik, 2006; Kaya & Yılmaz, 2016). As a result of the inquiry, an argument covering scientific processes should be used to introduce scientific information (Sariođlan & Bayırlı, 2017).

Since the 1950s, scientific process skills have had a place among the basic objectives of science teaching. In science teaching programs which adapt this approach, the goal is for students to use and internalize the scientific process actively (Ari, 2008). Scientific process skills should be stated as basic and integrated scientific skills. The precondition of learning of integrated skills is to gain the basic skills. The facilities aiming at making observations, applying practices and exploring the environment should be created to obtain basic skills. The

activities such as forming assumptions, comment and checking the variables and improving integrated skills should be practiced (Ango, 2002). Making an observation, measuring, making an inference can be classified as the basic scientific skills. Regarding the integrated scientific skills; checking the variables, doing experiments and data-collection can be stated (Chiappetta & Koballa, 2002; Zeidan & Jayosi, 2015). Scientific process skills are of great importance in science teaching.

Students who can actively use scientific process skills can also solve the problems in their lives by using scientific methods. This is one of the most important objectives of science teaching (Çepni & Çil, 2016). Although scientific process skills have a very important place in science teaching, prospective science teachers have quite low performances in conducting these skills and designing activities (Bahtiyar & Can, 2017). It can be seen that prospective teachers believe their scientific process skills can be developed; however, they have insufficient information about how to do this (Yıldırım, Atila, Özmen & Sözbilir, 2013). It will be inevitable for prospective teachers who cannot develop themselves on the issue to have negative reflections of this in their future professional life.

Scientific skills can be developed. In order to develop the scientific creativity of prospective teachers and to make them create scientific arguments, activities which can be applied within the class should be designed (Ayverdi & Aydın, 2017). Lack of scientific process skills will negatively influence prospective teachers' abilities to create arguments. With the development of prospective teachers' cognitive skills, their ability to create arguments will also develop in parallel. Being aware of what knowledge is, the reasons for what is known and the change in conceptual structure is related to argumentation. With argumentation, students learn to find justifications for the thoughts they have, to find out evidence to prove their ideas, to realize the limited aspects of their claims and to respect opposite thoughts by taking part in scientific discussions within the lesson (Demirel, 2016).

Prospective teachers who cannot develop scientific process skills will not have expected levels of interest and curiosity for science. The most frequent problem encountered in science, technology and mathematics education is students' being scared of these subjects. One of the reasons for such fear can be the method of education. The fact that a great number of teachers have not taken courses which teach them authentic scientific research during their undergraduate education causes them not to be able to determine student and teacher roles (Zion, Schanin, & Shmueli, 2013). Prospective teachers have difficulties in creating a problem area which reflects the real world while designing inquiry-based activities. In addition, the thought that they cannot manage the process of inquiry in parallel with the nature of science causes them to get anxious. This situation causes prospective teachers to be discouraged about performing the process (Bayram, 2015). However, on the contrary, especially during undergraduate education, prospective teachers should be educated in a way that they learn how to find a solution to problems within the context of daily life. It will be easier for prospective teachers who can practically create study environments focused on authentic tasks in which science, technology, engineering, and mathematics can be used together to transfer all these to their students in their professional lives in the future. A teacher who has a scientific inquiry and scientific process skills will reflect these on teaching programs and strategies. Thus, prospective teachers should have top-level inquiry-based science skills. A teacher with developed inquiry skills will also have developed scientific process skills. This, in turn, will be a very important opportunity for students (Karışan, Bilican, & Şenler, 2016; Kaya & Yılmaz, 2016; Bedir & Duman, 2017).

1.1. The aim of the study

It seems that inquiry skills are directly related to scientific process skills. A scientific questioning should be a topic to talk provided that questioning should be carried in an appropriate way during the scientific process and the most suitable time is the university education period to improve these kinds of skills. Considering the reasons stated above, questioning based activities have been improved and the use of the scientific process skills of the teacher candidates has been provided. The objective of this study is to research the effect of using inquiry-based activities on the development of scientific process skills of prospective science teachers.

2. Method

2.1. Research design

This study uses mixed research design, in which quantitative and qualitative research methods are used together. Mixed design allows a better explanation, expression and more detailed examination of the relationships between variables (Fraenkel, Wallen & Hyun, 2012). Rather than being a simple mixture of quantitative and qualitative methods, mixed method studies are studies in which strong aspects of these two methods are used together in a way that they support each other (Firat, Yurdakul, & Ersoy, 2014). The quantitative part of the study uses a quasi-experimental research method, which is one of the experimental research methods given as single group pre-test and post-test. The sample of the study consists of students studying in their third year of science teaching department at Ordu University (n=32). The study continued for a semester (3 months) within the context of "Nature of Science" course. Prospective teachers were grouped into "scientists" of 8 people. During the semester, inquiry-based nature of science activities was given to prospective teachers each week. 36-item scientific process skills scale, which had Cronbach alpha internal consistency coefficient of .70, was given to students as a pre-test in the first class hour and the same test was given to students as post-test at the end of the research.

2.2. Limitations

The study is restricted,
As the study group; Turkey, Ordu University the teacher candidates of Science 3rd class, 2017-2018 Education Year,

As subject area; "the lesson", "the nature Science and History" questioning based practices and events,

As time period: 90 days, 36 hours.

2.3. Analysis of the data

The scale was assessed out of a score of "100". In the analysis of the data obtained from the pre-test and post-test, SPSS 17 program was used and "t-test for dependent samples" was conducted. In the qualitative part of our study, "content analysis" approach was used. The primary objective of the content analysis is to reach concepts and associations which can explain the data obtained. The primary procedure of content analysis is to bring together similar data within the context of specific concepts and themes and to interpret these (Yıldırım & Şimşek, 2011). While collecting qualitative data, semi-structured interviews and semi-structured observation reports of 8 prospective teachers chosen randomly among the sample were used.

2.4. Activities

Prospective teachers who were grouped into scientists of 8 were assigned their tasks which required one group each week to perform the activity. Before starting the activities, students

were given theoretical knowledge about the nature of science for 6 weeks by the instructor. Prospective teachers who gained enough knowledge about the nature of science started to conduct the activities. The activities which were prepared under the related subject were performed in the classroom, guided by the instructor. The most important rule about performing the activities was the group doing the activity and the other 7 groups thought, discussed and acted like scientists. During the inquiries, examinations and discussions, the principles of the nature of science were applied. Where necessary, the instructor made interventions and guided the groups. The discussions took place within the principles of nature of science. At the end of the lesson, activities were summarized by the instructor and prospective teachers were asked inquiry-based questions and discussions were made.

For the activities assigned to groups, the section named “Activities used for teaching nature of science” in the book “Development and Teaching of Nature of Science” was used (Yenice, 2015). Some additions and deletions were made on these activities and they were used for this study. The activities used in the study are: “Mysterious Lines”, “Colourful Boxes”, “Competing Theories”, “New Society”, “Tangram”, “Einstein and Eddington”, “What’s on the side of the cube looking down?”, “Periodic Table”.

3. Results

3.1. Results of qualitative data

The interviews in this study were conducted with 8 prospective science teachers chosen randomly among the sample. The students who participated in interviews were named as S1, S2, S3, S4, S5, S6, S7 and S8 the qualitative data were analyzed. During the process of creating codes and themes, observation notes of the instructor teaching the course were used in addition to students’ interviews. Observation notes were expressed as O1, O2... Content analyses of qualitative data were defined under the themes of “social environment”, “cognitive characteristics”, “affective characteristics”, “effective teaching” and “personal attainments” based on interview codes.

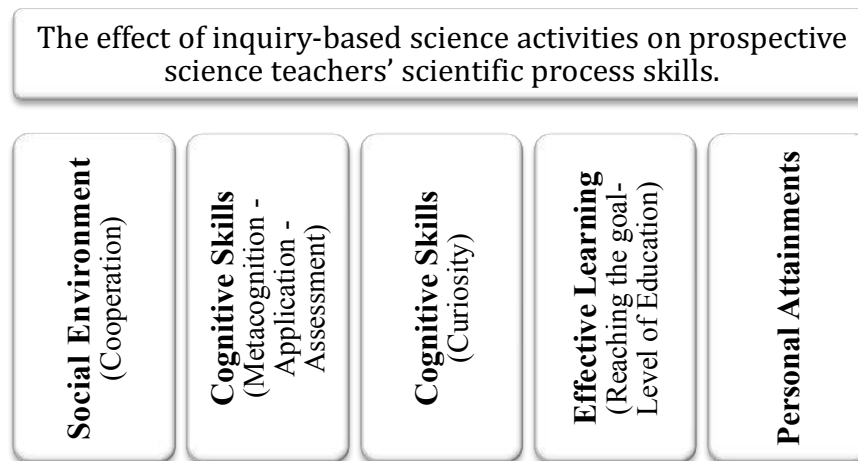


Figure 1. The pattern of the theme developed from interview codes and observation notes

Figure 1 shows the pattern of the themes developed to show the integrative structure of qualitative results.

3.1.1. Social environment

a) Cooperation

While conducting the science activities, prospective teachers mentioned the positive effects of cooperation based group work on their individual learning. They stated that inquiry-based

science activities were much more useful with mutual group interaction. Thus, it is understood that students developed an awareness for the significance of taking into consideration the views of other groups which think differently or which question the scientific explanations of their groups. In addition, it was observed by the researcher that starting from the first week, group members showed more compatible cooperation each week and their self-confidence increased (O1). Views of prospective teachers on cooperation in the development of scientific process skills and observation data are as follows:

“Since the activities were conducted firstly individually and as a group, they gave us permanent learning” (S5).

“We had the chance to try these by commenting on experiment results and making our own hypotheses and since there were many groups, there were similar and different results. Different results proved that science is not unquestionable information.” (S4).

“We developed ourselves through brainstorming between groups and within the group. We came a long way between the discussions in the first weeks and the discussions in the last week and this carried us to scientist status. We gained a great deal of self-confidence.” (S3).

“It was observed that agreement between prospective teachers within the group was low and this, in turn, decreased the effectiveness of discussions between groups. In the following weeks, the increase in agreement within the group increased the efficiency of the arguments used.” (O1).

3.1.2. Cognitive skills

a) Metacognition

Being aware of their own cognitive processes and knowing what they know and what they don't has a very important place in prospective teachers' learning. Prospective teachers stated that it is necessary to use effective learning strategies in a science lesson and that scientific process skills have a great significance at this point. In addition, it can be seen that prospective teachers realized that one of the most important characteristics of scientific teaching skills is interrogative thinking. It is a significant detail that they realize their learning situations and they interpret this learning by associating with their daily lives. This can be concluded as interrogative science activities' being effective in the development of students' metacognitive skills. Prospective teachers' views on their metacognitive skills are as follows:

“Since science lesson is very broad, scientific skills should be very high because subjects are interrelated and one needs to make theorems and hypotheses all the time. And knowledge is changeable. Science lesson is a changeable lesson. Thus, one should follow scientific processes all the time.” (S3).

“...before we took the nature and history of science course, we interrogated randomly, that is, we did not realize what we were interrogating.” (S4).

“Before I took this course, I had the view that “there is only one knowledge and it should be accepted by everyone without questioning”. But, I think different now.” (S1)

b) Application

During cognitive processes, prospective teachers are expected to make sense of learning in their minds and to apply this. The mental process of understanding should be completed effectively for the application process to be maintained effectively. It can be understood from prospective teachers' expressions that thinking and acting like a scientist, which is the most important rule of the application process of inquiry-based activities, creates a difference in the development of scientific process skills. In addition, it can be seen that they comprehended the significance of researching the accuracy of events or phenomena based on scientific criteria.

It can be seen that prospective teachers who internalized scientific process skills stated that they wanted to do this with their students in order to increase the efficiency of their lessons in their future professional lives. Positive reflections of inquiry-based activities in the application of knowledge which is made sense of can be understood from the expressions of prospective teachers.

“In this lesson, we tried to think like a scientist, we hypothesized according to the content of the activities.” (S5).

“First we interrogated the knowledge, made guesses, hypothesized and tested the accuracy of the knowledge.” (S3).

“When I become a teacher, I want to increase the efficiency of the lesson by including my students in what I am doing, like in this lesson.” (S1)

“...I test knowledge by looking at specific scientific criteria. I come up with theorems and bring them to a conclusion.” (S6)

c) Assessment

In order to be able to make an assessment which requires high-level cognitive skills, meaningful learning should be represented on an application and the process should be analyzed well. In the assessment stage, prospective teachers are expected to make judgments based on scientific criteria. It can be understood from prospective teachers' expressions that they prioritize scientific criteria during the assessment stage. It was stated that in addition to the positive effects of inquiry-based science education on their professional development, it will also be useful for their students. In addition, it can be seen that the process was assessed with a critical approach that using inquiry-based activities in all stages of education can give positive results. Prospective teachers' views on the assessment of the process are given below:

“It allows science teachers to create a communication environment to be included in projects suitable for inquiry-based science education they can use in their lessons and to develop materials and to contribute to their professional development” (S4).

“It is very important for students that a science teacher has high levels of scientific process skills. In experiments conducted with students, I feel that the most important success is achieved by teaching students the sense of interrogation in experiments conducted with students.” (S5).

“It could give more positive results if the lesson was taught in all levels of teaching.” (S1)

3.1.3. Cognitive skills

a) Curiosity

Curiosity is the most important component of the nature of science. The inquiry, which occurs with curiosity, is expected to take place within the basis of nature of science. At the end of the application process, it can be seen that prospective teachers began to wonder how the process took place before believing in some events or phenomena and that they looked for a cause and effect relationship. It can be seen that being curious leads to interrogation and this, in turn, causes a need for thorough research. It can be understood from prospective teachers' expressions that their needs for interrogation and curiosity increased positively when compared with their previous life.

“I am curious about the backstage of events in the newspapers and books I read. I think about the reasons and consequences.” (S1).

“I can look at scientific or normal events around me with a different perspective. I wonder, question, think and research.” (S2).

"...We learned how to work up to the solution when there is a problem we are curious about." (S5).

"...I used to look around in a simpler way. Without questioning, without wondering or caring about why things are the way they are." (S6)

3.1.4. Effective Learning

a) Reaching the goal

Methods and strategies used to reach a specified goal play a very important role in students' developing their knowledge and strategies. Using correct methods and strategies in reaching a goal is directly correlated with the attainments students will get. Our study will be more meaningful with the assessment of the process from beginning to end when it is approached as a whole. Prospective teachers who realize their insufficient inquiry skills before taking the course expressed being more conscious at the end of the process. At the same time, it can also be seen that they start to question the events or phenomena by using scientific processes. It can be seen that they emphasize the significance of inquiry and research, which are indispensable for science lessons, on the basis of the nature of science. It can be understood from the prospective teachers' expressions that they have a tendency to believe that they are weak to develop arguments for each event or phenomenon asserted. It is understood that with the help of activities which support the development of their inquiry skills, they realize how to develop arguments for any event or phenomenon. During the application, it was observed that prospective teachers developed themselves continually at the point of assessing themselves and the process (O2). Prospective teachers' views that they expressed during the interviews on the objective and goals of the study are given below:

"Before I took this course, I believed in every piece of news. After I took the course, I examine all the details of the news, make comparisons and measure the reliability of the information." (S3).

"...The biggest example is that I don't believe immediately that a simple news story is true. I use the steps of the scientific process and question the news and decide if it is true." (S4).

"...I think that it did develop, I realized that I don't look at the news with my previous perspective, I consider whether it is interrogative and scientific and make comments." (S5).

"I don't believe immediately any of the news I see on TV. For example, when there is news about ruins from a specific time ago, I question this and try to guess, it wasn't like this before. I believed immediately. Nature of science course contributed a lot to me on this." (S3).

"Nature and history of science course contributed a lot on interrogating, guessing and hypothesizing." (S4).

"While assuming a facilitating and guiding role during the process of learning and teaching, students also began to include interrogation. Students became individuals who research and question the source of information. It developed especially the skills of interrogation, research, and process in science lesson. It enabled inquiring by using the steps of scientific process." (S6)

b) Level of education

In addition to using an effective method and strategy, the level of education is also expected to be suitable for the sample of the study. It can be understood from prospective teachers' expressions that the activities prepared for them were suitable for their level of learning. It was found that prospective teachers who had active roles in activities were able to develop more effective arguments with the guidance of expert instructor when necessary (O3). It was understood that the activities and applications used in the lessons are effective in helping prospective teachers develop arguments including their scientific process skills (O4).

"I think that the paper news we prepared were enough; however, I think that there should be more experiments." (S5).

"The lessons were good. Scientific activities should continue in lessons because since we are the ones doing the activities permanence and the interest in the lesson increases this way." (S4).

"Scientist group work and story analysis suitable for the criterion of being scientific were good activities. There should be more activities about reaching information in parallel with scientific process steps." (S1).

"...The lessons should have more visuals and more discussions." (S3).

"We introduced ourselves as scientists, looked from their perspective and discussed the subjects this way. With this method, knowledge was more permanent." (S6).

"It was much easier to learn with activities. I had more ideas." (S2)

3.1.5. Personal attainments

The most significant effect of inquiry-based science activities on prospective teachers is personal attainments. It is an important attainment to develop oneself and to be able to apply what one has learned in daily life. It can be seen that prospective teachers expressed their self-assessment for their development in a positive way. They expressed that their perspective on an event or a phenomenon became more consistent with curiosity and inquiry. In addition, it can be seen that they learned how they can use scientific process steps in their daily lives and that this situation changed their perspective.

"I approach openly and interrogatively to innovations and this makes information permanent." (S3).

"Previously, I didn't mind if there was a word that I didn't know the meaning of while talking to friends; however, I love to search for things that I don't know about, I make researches on the internet about things that I don't know or about things that I recently learned." (S2).

"I conclude by interrogating many events and by using scientific process steps. Since everything is within science, permanence and perspective change." (S4).

"I don't believe in every news that I see any more, I inquire and I can guess the accuracy rates in my mind." (S6).

"...Of course, it contributed. Questioning science shows that science is important. I comprehended how to question knowledge and at the same time which steps to take to reach knowledge." (S1).

"We learned that there is an inquiry at the beginning of science, I reached correct information by wondering and following scientific process step by step." (S5).

3.2. Results of the quantitative data

The sample group on which the study was conducted was given scientific process skills test as pre-test and post-test and t-test analysis was conducted on the data obtained (Table 1).

Table 1. *Dependent samples t-test results*

		n	x	ss	sh	T-test		
						sd	t	p
Scientific Process Skills	pre-test	32	58,42	3,346	,591	31	4,581	,000*
	post-test	32	70,14	3,992	,706			

*P<0,01

When the pre-test results of the scientific process skills test were examined, the average was found as 58,42 and as 70,14 in the post-test. Dependent samples t-test analysis results show

that inquiry-based activities increase the scientific process skills of prospective science teachers statistically significantly ($t=4.581$; $p<0.01$).

4. Conclusion and discussion

The changes in scientific process skills of prospective teachers were measured through the analysis of pre-test data conducted at the beginning of the study and post-test data conducted at the end of the study. SPSS program was used for the analysis of data and dependent samples t-test was conducted. When the dependent samples t-test results were examined, a significant difference was found between prospective teachers' pre-test and post-test data of scientific process skills ($t=4.581$; $p<0.01$). From this, it can be concluded that inquiry-based scientific activities are effective in the development of scientific teachers' scientific process skills. It can be seen that the results of our study are in parallel with the results of Karamustafaoğlu and Havuz (2016)'s study that research-inquiry based activities increase prospective teachers' science teaching skills. In addition, it can be seen that the results of the study are in parallel with the results of studies which report that inquiry-based science teaching has a significantly positive effect on the development of scientific process skills (Karışan, Bilican, & Şenler, 2016; Kaya & Yılmaz, 2016; Bedir & Duman, 2017).

In order to make a detailed explanation about how and why this difference occurred, data of the interview conducted with prospective teachers and observation data of the researcher were analyzed in detail. Content analysis was conducted on the qualitative data obtained. The codes obtained from interview data were defined under the themes of "social environment", "cognitive characteristics", "affective characteristics", "effective teaching" and "personal attainments".

When the effects of inquiry-based scientific activities on the "social environment" within the class were examined, groups works based on cooperation can be seen to come to the forefront. It is expressed by prospective teachers that activities performed during the class allow for such cooperative learning and also useful shares between groups and within groups. Students' structuring and interpreting information are influenced by social and cultural factors as much as physical and personal factors. In order to make the learning of prospective teachers' meaningful, social and cultural environment should be taken into consideration (Stears & Gopal, 2010). Vygotsky's theory that development takes place from society to the individual (Vygotsky, Hanfmann & Vakar, 2012) is influential in this sense. Social environments are important opportunities to learn. In this study, it can be said that the social environments created are effective in prospective teachers' learning. It can be said that the social settings created in this study were effective on the development of prospective teachers' scientific process skills. It is thought that conducting research-inquiry based activities with group work is effective in the development of prospective teachers' problem-solving skills (Karamustafaoğlu & Havuz, 2016). Cooperative learning environments motivate cooperation, sharing, acting together, encouraging each other and learning. In cooperative learning environments, it can be said that prospective teachers help each other to learn and develop their social skills by working together to succeed in a common purpose (Arslan & Zengin, 2016)

It was found that teachers' lack of knowledge about how they can apply scientific processes in lesson subjects and in daily life has a negative influence on their practices. Undergraduate field courses should have an applied form of teaching. In these courses, prospective teachers should be taught the significance of the subject in daily life, where and how the knowledge and the skills gained will be used, concrete examples and associations by using scientific process skills (Tatar & Ceyhan, 2018). Prospective teachers' expressions under the theme of "cognitive characteristics" were examined under the titles of "metacognition, application, and assessment". It can be understood from prospective teachers' expressions that as their inquiry

skills develop and their scientific process skills also develop. It can also be seen that prospective teachers who are aware of their scientific processes are also successful in the stage of applying what they learn. At the same time, it can be seen that they are eager to transfer this skill they develop to their students in their future professional lives. It can be seen that prospective teachers who apply the scientific process skills they develop through inquiry-based activities keep their scientific process skills in the foreground while assessing the process. This shows that prospective teachers could develop their cognitive skills. In order for science teachers to develop their students' cognitive skills, they should have gained this information and skill in the first place (Aydın & Yılmaz, 2010). When teachers who have these skills create lesson environments which focus on students' cognitive development, important opportunities will show up in the development of students' cognitive skills (Kurnaz & Kutlu, 2016).

In their study, Tatar and Ceyhan (2018) found that prospective teachers ignored the skills, attitudes and values dimensions of attainments by focusing on only the information dimension while planning lessons. This study shows that prospective teachers do not have much information about cognitive skills. In addition to the development of prospective teachers' cognitive skills, the development of their affective skills is also very important. It can be understood from the results of the study conducted that very important attainments were created about "curiosity" which is very important for the development of prospective teachers' scientific process skills development. Curiosity is one of the most important steps of scientific process skills. Scientific process skills are indispensable for science. Science teachers who are curious, interrogative and who make researches are an important opportunity for their students. There is a positive correlation between curiosity and science subjects (Ceylan, Sağirekmekçi, Tatar & Bilgin, 2015; Harty, Beall & Scharmann, 1985).

For the development process of prospective teachers' scientific process skills, teaching should be conducted in an effective way. Under the theme of "effective teaching" teaching activities' reaching their aim and the level of education have an important place. It can be seen from prospective teachers' expressions that their inquiry skills were poor before the lesson started; however, as time went by, they developed this skill with the help of inquiry-based activities. Prospective teachers need developed inquiry skills to make accurate arguments. These kinds of skills can be developed through the use of correct methods and strategies in correct teaching level. Teaching environments and plans should be designed to develop students' thinking skills (Aydın & Yılmaz, 2010). It can be said with reference to prospective teachers' expressions that the study reached its objective in terms of this aspect. It can be concluded that by creating teaching environments which will enable more applied research-inquiry based science teaching, prospective teachers' self-sufficiency beliefs will also be increased (Kocakulah & Turan, 2017). Scientific skills can be developed and in order to develop the scientific creativity of students, activities which can be applied within class should be designed (Ayverdi & Aydın, 2017). Teachers' competence comes to the forefront in the design and application of such activities. In their study, Tatar and Ceyhan (2018) reported that prospective teachers had difficulties in planning and applying activities based on student-centered methods and techniques. It can be understood from prospective teachers' statements that the teaching environment created in our study had an influence on developing their scientific process skills. It can be said that the difficulties experienced by prospective teachers who have developed scientific process skills can be minimized in designing and applying student-centered activities.

When this study is discussed in terms of personal attainments, it can be seen that prospective teachers stated that the study contributed a lot to the development of their inquiry and scientific process skills. It can be seen that they stated having learned to use scientific process skills while evaluating the events or phenomena within daily life. In the teaching of prospective teachers,

it is very important to include activities to develop learning skills, self-sufficiency and personal attainment (Deveci & Çepni, 2014). It is understood from the expressions of prospective teachers in the interview that this study contributed to their personal development.

5. Recommendations

The most important factor in the development of scientific process skills is inquiry skills. Since research-inquiry based teaching also develops critical thinking skills, it will contribute to the development of students' skills about science subjects. Science teachers should be educated on the basis of the nature of science and they should make this a part of their lives. Inquiry-based science activities play an important role in the development of such activities. It is recommended for researchers that the content of lessons taught in the departments educating science teachers should include more inquiry-based science activities.

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A CRISS-CROSS OF FORCES: THE POWER RELATIONSHIP IN THE PROCESS OF CREATING THE CITIZENSHIP CURRICULUM IN TAIWAN

Research Article

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Abstract

The citizenship curriculum used in Taiwan during the authoritarian period from 1949 to 1987 sacrificed the individual for the national interest as a tool for political socialisation. In the wake of democratisation since 1987, the curriculum has gradually been stripped of its nationalist overtones which were designed to foster ‘informed citizens’ to facilitate those in power. The increased stress on the reflective and critical capabilities of the individual reminds pupils to examine their positions and roles in society instead of mechanistically accepting the existing social structure. This article sheds light on the intricate internal-external power relationships and differing views on critical pedagogy among curriculum designers. Interviewed curriculum designers hold that pluralistic ideologies should be presented in the curriculum and then room should be left for students to deliberate or judge for themselves. As the gatekeepers tasked with deciding which information to include and being faced with the intervention of numerous internal and external forces, the Curriculum Committee sided with the critical theory and aimed to break the unreflective social reproduction.

Keywords: Curriculum Studies, Citizenship Education, Critical theory, Critical Pedagogy, Curriculum Design, and Social Reproduction

1. Introduction

Before 1949, Taiwan, lying approximately 120 kilometres off the coast of Mainland China, had been settled or colonised by the Netherlands, Spain and Japan (Hughes, 1997; Roy, 2003). In 1949, the KMT (Kuomintang or Nationalist Party of China) fled the Mainland for Taiwan after being defeated by the Chinese Communist Party in the Civil War. A standoff between ROC (the Republic of China in Taiwan, founded by KMT) and PRC (People's Republic of China) ensued across the Taiwan Strait. To suppress local forces and make Taiwan easier to govern, the implementation of martial law by the KMT government in 1949 not only restricted the full panoply of human rights but also demonstrated how the authority's ideology permeated through the education system to mould citizens' compliance and allegiance (Roy, 2003). Citizenship education (CE) was introduced in schools but the curriculum was confined to policy campaigns, fostering Confucian morality and spreading propaganda about, for example, anti-communist ideology and the goal of retaking Mainland China (Deng, 2012; Hung, 2013b, 2015a, 2015b, 2015c). After the surge in social openness and democratisation following the end of martial law in 1987, the presidency changed hands in 2000 and again in 2008 and the push for liberty, equality, basic rights, and constitutional democracy spread and influenced almost every aspect of society, including education (Hung, 2018; Roy, 2003). Revisions to the citizenship curriculum in 1994 and 2005 included more coverage of the value of individuality and social participation (Deng, 2012). The latest curriculum, implemented in 2010, further stresses the pluralistic dimensions of the society and the necessity of building an inclusive environment where individuals from different backgrounds and with diverse visions of life can live side-by-side and thrive (Taiwan Ministry of

Education, 2009). The evolution of the citizenship curriculum saw a switch from a collective and nation-centered configuration to an individual-oriented and humanistic construct. The goal to produce submissive and obedient citizens and perpetuate the existing social structure has gradually been eliminated through the series of education reforms since the 1980s. The heightened weight given to the self shares a similarity with the concept of critical pedagogy. This article, therefore, attempts to investigate how the committee members absorbed this concept into the process of curriculum design so that the components that entrench social stereotypes and subservience can be ruled out. By means of interviews, 18 curriculum designers reflect on their own roles, the process of curriculum construction, the power relationships inside and outside the Committee, and the compatibility of CE with the critical theory. However, the conflict between those within the Committee holding different visions on critical pedagogy, particularly sociology and economics, highlights the difficulty of subsuming these topics into one high school subject and uncovers the still unsolved tension for the future curriculum designers to consider.

2. The formulation of the new citizenship curriculum

Throughout its almost 70-year history, the Taiwanese CE has undergone eight reconstructions and amendments (Deng, 2012). The latest version, renamed Curriculum Guidelines for Civics and Society, was introduced in 2010 to every senior high school across Taiwan and is composed of four major themes, Guideline 1- Self, Society, and Culture; Guideline 2- Politics and Democracy; Guideline 3- Morality and Legal Regulations and Guideline 4- Economics and Sustainable Development (Taiwan Ministry of Education, 2009). Guidelines 1-4 are compulsory courses for the 1st and 2nd grades in senior high school and there are also Guidelines 5 & 6, which are optional courses for the 3rd grade. In the foreword of the curriculum, it specifies that the subject attempts to enhance pupils' civic knowledge of psychology, sociology, culture, politics, morality, law, economics and sustainable development and 'abilities of thinking, judging, decision-making, reflection, communication, problem-solving, creation and proactive action for social participation' (Taiwan Ministry of Education, 2009, p. 7). In contrast to the cultivation of 'informed citizens' of the old curricula which were designed in compliance with Confucian doctrines, historical glory and ethnocultural nationalism, the new curriculum is regarded as a humanist construct centered on liberal values, democratic principles, basic rights, pluralism, and critical and reflective ability of the individual (Deng, 2012; Doong, 2008; Hung, 2013a, 2013b, 2017; Law, 2002, 2004; C. M. Lee, 2004; W. O. Lee, 2006; W. O. Lee, Grossman, & Kennedy, 2008; Liu, 2000; Morris & Cogan, 2001; Weng, 2007).

Professor of Sociology, Chang Mau-Kuei from the Institute of Sociology, Academia Sinica was appointed as the Chair of the Curriculum Committee by the Minister of Education, Dr. Du Zheng-Sheng, in 2007. The Chair provided a list of potential curriculum designers, comprised of social science academics, ranging from sociology, political science, law, economics, to educational and cultural research, and experienced schoolteachers for the minister to choose from. These fifteen curriculum developers brought their professional perspectives and personal visions of the subject to the Committee. The process of communication, deliberation, negotiation, and final agreement elicited a comprehensive and analytical examination regarding the curriculum guidelines (Chang, 2009). Four public hearings, which attracted more than 70 people, including schoolteachers, parent associations, student unions, publishers, university teachers and members of the public interested in CE, were held to gather external feedback; five focus groups also took place to gain broader opinions from social associations, such as human rights, NPOs and gender groups (Taiwan Ministry of Education, 2009, p. 48). After this preparation stage and a trial implementation, the curriculum was officially implemented in August 2010.

3. The theories of ideology and critical pedagogy

The study of the exploitable nature of ideologies has been at the core of Marxism. Different uses of the ideology can either draw people into becoming staunch believers or can liberate the adherents from their entrenched misconceptions. Geuss (1993) categorises these ideologies into three types: the 'descriptive', 'pejorative' and 'positive' senses of ideologies. The 'descriptive' form refers to the concepts, ideas, dispositions, and beliefs a human group or social class upholds (Eagleton, 1991, p. 43; Geuss, 1993, p. 4). The non-judgmental nature of this type simply reflects different strands of thinking and makes no attempt to impose any oppressive form such as the 'pejorative sense' of ideology does. By sleight of hand, which underlies the second type of ideology, it seeks to gain maximum compliance by promoting its perspectives and creates an unreflective environment to reinforce its imagined 'universal truth'. In Marxist theory, a limited or distorted view of social reality is extended to all social scenarios, thereby convincing the audience of a particular way of viewing the world cognitively and emotionally. For example, the proletariat has been deprived of sufficient information with regard to the enterprise of capitalism and socialised in a certain way, being prevented from seeing their own true interests and needs. As a lively 'camera obscura' analogy brought up by Marx, subjects are given an image of the life-world that is the inverse of this real portrayal of reality (Paolucci, 2001, p. 78). Under this 'false consciousness' and 'delusion', people unconsciously forego reasoning and deliberation (Geuss, 1993, p. 12). In contrast, the ideology in the 'positive' sense, as an ideal form, enhances the enabling conditions for a specific group or class to be aware of where they stand and how to fulfill their lives based on their choices (Eagleton, 1991, p. 44). However, any misuse of this 'positive' type may generate the same 'false consciousness' as the 'pejorative' type.

Foucault, in his famous work *Discipline and Punish* (1977, pp. 170-194), has described the situation where the 'pejorative' sense of ideology is applied to an educational context and forms a captivating belief for people to subscribe to, as the internalised 'disciplinary power'. This often prevails in prisons, hospitals, asylums and schools where it gradually imposes a certain hierarchical ethos and establishes a mechanism to secure control by those in authority. Marxist philosopher Louis Althusser (1971, pp. 137,145-149) also lists schools as one of the 'ideological state apparatuses' (ISAs), along with family, churches, press, trade-union etc. in capitalist societies. The monopoly of legitimate 'symbolic violence' held by the dominant group's arbitrary power creates a 'field' conducive to the maintenance of the vantage point and imposes the 'habitus' expected to be acquired by pupils (Bourdieu & Passeron, 1977, pp. 4-7). The 'habitus' refers to the internalized character and 'those subjective dispositions which reflect a class-based social grammar of taste, knowledge, and behavior inscribed permanently in the developing individuals' (Giroux, 1981a, p. 9). Bourdieu perceives that 'habitus' based on the shared beliefs implicitly structures the internal operational mechanism and safeguards the existing cultural and class reproduction system. Therefore, 'symbolic violence' is not a direct imposing force on the oppressed but a replication of the favoured structure which paralyses the reconstruction of a new milieu and potential social change. Imbued with conservative rather than liberating forces, schools often perpetuate the existing dominant culture and social inequality, and school children, as the most vulnerable knowledge recipients, internalise these reactionary social control structures (Lakomski, 1984, p. 152).

In Paulo Freire's famous 'banking concept of education', students are perceived as the 'depository' and teachers as the 'depositor'. The creative and transformative power of the student is smothered under the customary process of knowledge receiving, memorising and

repeating in the daily school life (Freire, 2003, pp. 72,77). However, Freire reflects on the teacher-student contradiction with optimism and concedes that sooner or later, the passive pupils would break through the 'banking education' and engage in the struggle for emancipation so that the conscious being can thrive (Freire, 2003, pp. 75,82). The stress on human agency, critical thinking of the individual, the reflections on inherent social domination and liberation can exemplify the spirits of critical pedagogy (McLaren, 1998, pp. 209-213). Critical pedagogy has inspired educators to closely inspect knowledge transmission in schools and by bearing this strand of thinking in mind, curriculum designers, as the front-line guardians to ward off the 'pejorative' sense of ideology, can prevent the school from being manipulated for political propaganda and becoming a forum for facilitating unreflective social inequality.

4. Methodology

In order to investigate the critical aspects underlying the curriculum, the composition of the Curriculum Committee and the visions of its appointed members who had a direct influence on the design of the curriculum are two major dimensions to trace. In addition to examining governmental documents, academic critics, Committee meeting minutes, public hearing records, and focus group seminar records by means of documentary research, this research interviewed (a) eight curriculum developers from the Curriculum Committee (the composition of the Committee has been explained earlier) (coded from 'A' to 'H') and (b) ten curriculum advisors, comprised of scholars and schoolteachers who took part in public hearings, focus group seminars, and the examination of textbooks (coded from 'I' to 'R'). Every one-to-one interview conducted in Chinese lasted around 60 to 90 minutes. Following the semi-structured interview method, the pre-prepared questions directed the interview process but intermittent probes came up for deeper exploration. Curriculum advisors provided opinions and this group of participants played an auxiliary role in the process of curriculum development. Each interview, taking place in Taiwan from October 2012 to April 2013, was conducted in Mandarin Chinese and lasted approximately 60 to 90 minutes. Due to the upcoming transformation of the curriculum in 2018, some abovementioned informants were re-interviewed in 2015-2016 to record how this current curriculum was shaped. The interviews started with a critical grounding of the Committee and then centered on how they overcame the divergent opinions to hammer out an agreed set of contents and handled, filtered, digested or incorporated emergent views from external forces to maintain or enhance the critical elements that the new curriculum was intended to pass on to pupils. It should be noted that, in this article, both interviewed curriculum developers and advisors are anonymously coded for ethical reasons but the names of curriculum developers referred to in the excerpted interviewees' accounts are not anonymised because the list of committee members and the meeting minutes are accessible to the public.

Both content and discourse analysis techniques were used in this research. For the former, through the documentary method, the repeated wording and language uses highlighted the agreed opinions shared by interviewees. The triangulation between curriculum designers, relevant documents and existing literature enhanced the credibility of the research (Drew, Hardman, & Hart, 1996). To explore the hidden views and agendas behind the interview data, the discourse analysis, which is more sensitive to the implicit messages, is used to read beyond the transcriptions and place interviewees' views in a larger sociocultural context so that deeper meanings and holistic analysis can be uncovered and formulated.

5. Findings and discussion

5.1 Internal power relationships and the pluralistic leanings of the curriculum

In the Curriculum Committee member selection mechanism, the appointed Chair provided candidates for the minister to choose from. It can be assumed that the Chair and minister's choices have dictated the development of the citizenship curriculum. Even though Taiwan has been a democracy only since the late 1980s, the effectiveness of supervision and scrutiny from the Legislative Yuan (Parliament) and the opposition party in examining the process of curriculum making has reduced concerns about appointments of curriculum developers being made for pure political purposes. As interviewee 'B' says that 'back then, under the inspection of the public, minister Du couldn't appoint whoever he liked to the Committee' and 'the Chair, Professor Chang, was regarded as fair and just by society'.

Curriculum developer 'E' and advisor 'O' both portray the Chair as a person who is 'open to different voices both from within the Committee and from external pressure groups' and has the sound 'democratic credentials'. Some may criticise this selection mechanism as 'picking all the king's men' due to the selection and nomination being in the hands of the minister and Chair. It is justifiable to say that the appointed members' characters and visions resemble the Chair's and it would be counter-productive if the committee leader searched for someone 'on different pages' to cooperate with. Curriculum developer 'G' points out that 'it is impossible to exclude any interference of politics in curriculum design because the appointment of every committee member is unavoidably made by political decisions'. Interviewee 'G' regards this as part of due process in a democratic society and argues that the public should closely scrutinise 'who is included in the Committee and to what extent political forces get involved after the appointment' rather than just criticising the intertwined relationship between politics and education. The key academic players and CE teachers selected brought their own independent perspectives on the subject, and, according to the Chair's observation on the committee — 'nothing was left un-debated', curriculum developers hardly presented uniform opinions on each curricular guideline (Chang, 2009, p. 21). Especially under the uninhibited atmosphere prevailing in Taiwan nowadays, it is insensitive to categorise the committee as mere lackeys under the thumb of the Ministry of Education.

Most people in modern democracies believe that any liberal social system, including education, should be neutral regarding individual preferences and personal decisions as long as they are made from free will. It should first be debated whether such a thing as an 'impartial' curriculum is attainable. 'No' would have to be the answer given that the most liberal curriculum still guarantees the superiority of certain forms of values, such as freedom, justice, equality, toleration, etc. The aim of creating value- or ideology-free curriculum is hardly achievable if we analyse the intentions lying behind the content (Heater, 2004, p. 156). The Chair of the Committee in October 2012 in a seminar said:

When I was invited to organise this Committee, the Minister of Education told me that he expected a new curriculum free from any ideology, in contrast to the old curricula. I also often heard similar comments from schoolteachers and parents. But, I want to pose a few questions, 'isn't multicultural education a kind of ideological education?', 'Doesn't gender education employ some ideology?', 'Aren't human rights a sort of ideology?' How can our Curriculum Committee possibly avoid embedding any ideology?

So, we should not get confused about what we are doing. That is — we are educating our pupils with ideologies. Ideologies are things which make you instinctively and naturally believe without questioning their truthfulness. For example, if you believe yourself Chinese,

you might find it okay whilst studying the old curricula. But now, almost everyone criticises the old curricula as a political tool imbued with China-centered values because most of us think we are Taiwanese and therefore encounter ideological conflicts. These conflicts happen when our belief system is impacted by new thoughts. So, we are always carriers of ideology. The aim of schooling is also driven by values and ideologies.... The difference between the old and new curricula would be that we are no longer teaching a specific ideology but teaching 'about different ideologies'. These contents are open to discussion, reflection and debate.

The Chair holds that knowledge is often transmitted under the guise of objectivity and contents and ideologies are constantly intertwined. As Giroux (1981b, p. 131) notes, 'liberation begins with the recognition that knowledge, at its root, is ideological and political, inextricably tied to human interests and norms'. The Chair thus disabuses us of the idea that the curriculum is free from any embedded intentions and remarks that only when this interrelation of curriculum, society and power relations has been unveiled, can we examine the curriculum with clear eyes. Ideology, as a contentious concept, has been deconstructed by Geuss (1993, pp. 5-26) into three subcategories: ideology in the descriptive sense, pejorative sense and positive sense. The 'innocuous' ideology remarked upon by the Committee Chair based on the spirit of pluralism stands closer to the first sense. The Curriculum Committee, in line with Geuss' descriptive definition, aimed to include diverse ideological values into the new citizenship guidelines. By not 'teaching a specific ideology', the concern about imposing 'false consciousness' and 'delusion' on the next generation can be alleviated (Geuss, 1993, p. 12). The reflective and creative environment stemming from the self-aware and pluralistic views may not achieve the highest form of the positive sense of ideology but may enable students to see through the intentions underlying the knowledge transmission and form their own opinions.

Disputing the existence of a 'neutral' curriculum and the presence of objectivity of knowledge contained within, the Chair, in one of his published articles, admitted that every Curriculum Committee member carries individual enthusiasm, ideals and ideologies to join this process of curriculum construction. As described in the article, exhaustive consultations were undertaken to reach the 'most probable agreement' and 'nothing was left un-debated' (Chang, 2009, p. 21). Curriculum developers and advisors 'G' and 'J' also reveal the complexity of the process to construct the curriculum, and respectively analyse the group from different aspects:

The nature of this subject exposes its limits in the curriculum establishment. CE consists of eight disciplines [psychology, sociology, culture, politics, morality, law, economics and sustainable development] and needs specialists from diverse social science backgrounds to work together. Besides, schoolteachers from different corners of Taiwan also joined this already-complicated group. The process of brainstorming and deliberation was described by some people as a 'tug of war' between different forces. (Interview with 'G')

Each curriculum developer has his or her own individual expertise. Almost everyone thinks their own discipline most important and asks for more space for their themes. For example, moral educationists and legal specialists are in charge of the whole Guideline 3 Morality and Legal Regulations, but one moral educationist thought his/her discipline very important and kept asking for more space. So the curriculum ends up with two chapters about moral theories, which some of us still think unnecessary. (Interview with 'J')

Interviewees 'G' and 'J' single out the type of 'power relation' among specialists from different academic backgrounds within the committee. Interviewee 'G' maintains that those with stronger personalities can make their voices heard more easily. The curriculum

developers who are selected to join this team are expected to stand out in their field and the eight major disciplines they represent are of equal significance. When a discipline, for example, economics or politics, gains 'high visibility' in the citizenship curriculum, it may interest more students to explore it further and benefit either the future development of the subject or the numbers of enrolments at the university level, which is an issue particularly since certain universities and less popular departments are suffering from a shortage of new students in Taiwan. CE comprised of eight major humanity subjects becomes a battlefield open to competition, described as the 'politics of curriculum' by curriculum developer 'E'. As Coulby (2002, p. 15) observes:

Specialist academics are all too likely to be partial to their own subject and to wish it to have a preponderant part in the school and university curriculum. Their very specialism might itself preclude them from the broad overview needed in the definition of the shape and structure of curricular systems. They may be concerned with large amounts of specialist subject content that readily leads to overcrowded and cluttered curricula.

'It is believed that every committee member intends to give pupils the most rounded knowledge of their discipline, but we should pause to think whether such knowledge is what they need in daily life or what "we" expect them to get hold of', interviewee 'R' says. However, the limits on space for the guidelines, competition for that limited space between disciplines and the question of each guideline's worthiness stimulated and intensified the critical examination of the curriculum content, as can be seen in the internal process of curriculum construction. The next section will extend the focus on how the Curriculum Committee dealt with the external forces and countered the interferences that reflected existing social inequality.

5.2 The critical feature of the curriculum committee and its evaluation of the external interference

With Curriculum Committee members' divergent opinions about current Taiwanese society and CE, a new epistemological system was formed after the collision and melding of their different 'horizons'. Curriculum advisor 'O' sketches his/her impression on the curriculum developers and states:

If you have the chance to look at the members in the committee, you can find that they are full of critical thinking.... Attributed to the Chair's lead, I am impressed by this new and different curriculum. The committee strongly stresses progressive spirits and anything detrimental to these progressive values would be ruled out. When Professor Chang chose the committee members, progressive-minded candidates were invited to join. Thus, the traditionalists and conservatives were crossed out first. For example, those who adhere to traditional Chinese thinking were eliminated this time. (Interview with 'O')

The emeritus professor, Weng Zhi-Zong from National Academy for Educational Research also gives the Committee and the new citizenship curriculum positive feedback:

The curriculum manifests the value of humanism. Basic rights, environmental rights, people's peace and existence rights, the right of access to the media, the introduction of the first, second, third and fourth-generation of human rights, and civil disobedience are progressive thoughts. Thus, the new curriculum embodies the value of individuality and humanism (Weng, 2007, p. 42).

The pluralistic and critical features of the Curriculum Committee guide the curriculum in a certain progressive direction, encompassing democratic, liberal, egalitarian and pluralistic values. This transformation to modern progressivism shows a sharp distinction from previous curricula. Apart from the constant collision of different visions among committee members

that shape the contours of the subject, the external forces also, at times, sneaked an invisible hand into the curriculum design process.

The Chair, in his article, first points out some ‘extra attention’ from governmental institutions, such as the Ministry of Justice and the Financial Supervisory Commission, urging the Curriculum Committee to include the Laws & Regulation Database and financial education to inform pupils of their rights to access legal resources and to enhance their financial literacy (Chang, 2009, pp. 12,13). The committee did not follow all of the advice received from the government, especially regarding financial education, as curriculum advisor ‘O’ explains:

People always talk about the importance of financial education because lots of people end up becoming credit card slaves or being trapped in investment scams, suffering deep debt. However, the Chair insisted on including knowledge on labour affairs rather than financial knowledge. He thinks that most pupils will, in the future, become different kinds of ‘labourers’ and focusing on ‘financial management’ presupposes that everyone will get hold of a fortune to manage. But apparently, instead, lots of people are experiencing unemployment or are ignorant of their labour rights. Therefore, financial management is mentioned but not completely included. (Interview with ‘O’)

The curriculum design process, characterised as a wrestling match over knowledge and power, might impair most people’s trust in education and resonates with Foucault’s dictum— ‘power is knowledge’. However, as Foucault and Bourdieu have illustrated, power is omnipresent and power relations cannot and should not be ruled out because this is how the society is constituted and evolves (Bourdieu & Passeron, 1977; Foucault, 1977). What we should eliminate is the extent of ‘inequality and discrimination’ rather than the power relations themselves. Therefore, if the Committee fails to act as a gatekeeper to filter the forces involved in the process, the embryonic curriculum may be paralysed by the external powers. In this case, the Committee took the Minister of Justice’s suggestion to include the legal database in the curriculum but declined to extend the economic contents section to include financial education, showing its resistance towards the ‘middle class’ concept of financial investment and wealth accumulation. The Curriculum Committee is cautious about replicating a certain socio-economic class’s ideology and attempts to challenge the deliberate reproduction of the social, economic, and cultural status quo. A school ethos imbued with bourgeois ideologies creates a ‘habitus’ marginalising children from less wealthy backgrounds. The dominant groups’ mindset, which the aforementioned financial and investment education may fall into, may be therefore endorsed by schools and internalised by pupils through daily educational activities (Giroux, 1981b, pp. 134,135). To break this mechanistic reproduction, schools should instead include the general public’s lifestyle and language, for example labour knowledge, to counter against the omission or depreciation of the dominated class’s values in the curriculum, and promote pupils’ ‘critical reading of reality’ and ‘creative power’ to look beyond the surface of the transmitted knowledge (Giroux, 1981b, p. 134).

In Gramsci’s view, those who resist hegemony and bring the creative force of transformation to their fellow countrymen are ‘organic intellectuals’, in contrast to ‘traditional intellectuals’ who duplicate the old class structures of society with the reactionary force and withhold their empathy from the voiceless and subjugated (Kincheloe, 2004, p. 66). Banks (2001, p. 10) also defines those intellectuals who challenge ‘mainstream’ knowledge and unconscious social reproduction as ‘transformative scholars’. In order to question the taken-for-granted values in the education system, the ‘transformative scholars’ create a dialectical space for diverse views to be heard and deliberated. The progressive structure of

the curriculum conceived by the designers with transformative and forward-looking characters is not only receptive to the varying visions of the society but also reciprocally contributes to incessant social change.

Apart from the aforementioned pressure from the state apparatus, the Chair in his article also mentions the attention paid to the process by politicians. For instance, the office of the former vice president, Lv Xiu-Lian, (from 2000 to 2008) encouraged the committee to include 'competence indicators of maritime education' given that Taiwan is an island nation dependent on the sea for trade and with a large fishing industry. The agenda of maritime education was posed upon the committee in the construction of curriculum guidelines (Chang, 2009, p. 14).

In addition to political interference, we can also find evidence of strong pressure from social groups. Pressure groups concerned with social issues hoped for their viewpoints to be covered in the curriculum (Coulby, 2002, p. 14). Gender and human rights associations particularly paid careful attention to its construction, concerned as they were about the promotion of gender equity and the avoidance of discriminatory language. The critical character of the citizenship curriculum has been formed not only by the Curriculum Committee but also by external influences, depending on how the curriculum developers construed, evaluated, and incorporated the various suggestions and proposals from outside. Even though the curriculum members reached a consensus and put the new programme into effect, the end product of the curriculum is, by no means, free from inherent contentions. The next section will unveil the tension underlying the new guidelines between those holding sociological and economic perspectives with the consequence that the left-leaning foundation and the critical features of the curriculum faced a challenge from supporters of laissez-faire and consumerism.

5.3 The unsolved tension between sociological and economics education

As discussed above, 'labour affairs knowledge' has been given preference to financial education by the Curriculum Committee and became individual Guideline 5.4 The Meaning of Labour Force Participation. However, some labour unions worry that it is not enough. Taking aim at the introduction of basic economic concepts in the curriculum built upon Adam Smith's liberal market theory, these groups voice their strong antagonism, as interviewee 'D' describes:

Once we held a focus group seminar, the labour groups, which are against the market economy, struck the table and accused us of exclusively endorsing the free market. They claimed that the underlying assumptions like 'governmental interventions are bad', 'restrictions are not good', 'labour movements are detrimental', 'the increase of the minimal wage will lead to higher unemployment', are rampant throughout the Guideline 4 [this guideline covers the topics of economics and sustainable development]. They are right in some way, I admit. This part of our CE is quite right wing and capitalism-oriented. We sometimes do not know how to deal with this section because the free market is like Economics 101 and lots of well-known economic theories, either pro- or anti- Adam Smith stem from the free market concept. I know we did not incorporate this part into the whole curriculum well enough. We did use the theme of 'sustainable development' to point out some external effects and bad consequences generated by a capitalist economy system. (Interview with 'D')

It can be argued that different political and social groups attempt to bring their aspirations and ideals into the process of knowledge selection. Not only did the distinct beliefs held by individual committee members collide, but also the external forces complicated the whole

curriculum construction. To sum up the above arguments, the Curriculum Committee, the government, politicians, especially from the opposition, pressure groups, and the public form a complex 'balance of opinions' in a sense to ensure that the direction is not dictated just by a specific group of people. Under this mesh of power relations, it is difficult to place the curriculum along a specific strand of thinking due to the imprints left by the multiplicity of players. The interview accounts gathered from the curriculum developers and advisors exhibit a wide spectrum from left to right on the political continuum. Curriculum advisor 'P' maintains:

If we compare this new curriculum with the old ones, this one leans towards the left wing in general. The old curricula never taught Administrative Law, the administrative procedure, or the State Compensation Act [in Guidelines 3-5-1, 3-5-2 & 5-8-3]. The old ones did not talk about the right of petition for a constitutional interpretation of a case, or the contravention of human rights caused by the random police checkpoint inspections. In the past, we never taught pupils to debate whether the police can be wrong or can abuse its powers. Now, we teach constitutional interpretations, the possibility of a violation of the constitution taking place, students' rights, civil obedience and administrative litigation [in Guidelines 3-3-3, 1-3-2 & 3-8-2] to illustrate the supremacy of human rights and civil conscience. The curriculum is following the liberal trend and societal transformation. (Interview with 'P')

Administrative law and procedures taught in schools aim to empower civil society to monitor whether the government is bypassing regulations and is violating the principle of rule of law. Interviewee 'P' further points out that 'when pupils are given these concepts, they tend to reflect on these in the school context and pay more attention to the legitimacy of school regulations. Another curriculum developer 'F' shares the same opinion, and specifies:

For the current social development, the Chair once told us that modern citizens should play a centre-left role to counter the machinery of the nation-state. His stance from the very beginning has been very clear. We include new contents such as gender and sexual diversity, the rights of the socially disadvantaged, social movements and civil disobedience. Civil disobedience, in particular, attempts to teach pupils how to stand up to deal with illegitimate acts by the state. (Interview with 'F')

Interviewee 'F' implies that the new curriculum intends to challenge the traditional perspectives on gender difference, the ignorance of gay, lesbian, bisexual and transgender groups. The non-discrimination statement and the protection of the minority groups are also stressed in Guideline 1-8-1-1 The Cultural Difference and Equal Treatment & 1-8-1-2 The Protection of the Minority Groups and the Promotion of their Rights. Moreover, the measures and approaches to defend individual and collective rights from oppression and exploitation, such as labour strikes, consumer movements, non-violent resistance and non-cooperation movement, are also expounded to manifest their relevance to democratisation and social development. When we take the aforementioned resistance to 'middle class' financial education into account again, that the curriculum displays left-oriented features and the spirit of 'egalitarianism' becomes clear.

The above illustrates the difficulty and limitations inherent in combining economics and CE due to the different natures of the two disciplines. The discussion of economics starts with microeconomics and thus free-market capitalism, based on the theory of supply and demand reaching equilibrium, is first introduced in Guideline 4. Even though the curriculum designers attempt to dispel the impression of the supremacy of classical and laissez-faire economics by depicting recessions, inflation, market failure and the destruction of the environment, the Keynesian macro concept of government intervention, later on introduced in Guideline 4, fails to redeem Guideline 4 from being labelled as having a pro-capitalism

and pro-privatisation bent. Interviewee 'D' therefore confessed 'we did consider separating CE and economics before'. However, more interestingly, those who are in support of including economics education in compulsory education tend to regard this social science discipline as an approach to enhance students' acumen for rational judgment, risk evaluation and life planning and these seemingly self-interested behaviours can also be associated with the virtues of honesty, trustworthiness, cooperation and responsibility, although they are hardly driven by pure altruistic motives (Clark & Schug, 2010, p. 88; Gutter & Garrison, 2010, p. 128). Educating pupils about where to draw the line between 'self-responsibility' and 'greed' is supposed to be covered in the guidelines for the economics curriculum.

The microeconomic structure of Guideline 4 adds a 'libertarian' flavour to the curriculum. Curriculum developers from the sociology disciplines criticise Guideline 4 for being indifferent to the inequalities existing in society. The clinical attitude towards egalitarianism is criticised for being inadequate to transform the status quo and for not reining in the more dehumanising and exploitative features of a less regulated market. Libertarians, on the contrary, question the feasibility of constructing an equal society attuned to the principle of 'the greatest benefits to the least advantaged' by means of redistribution, which may result in sacrificing the value of self-determination to government intervention (Kymlicka, 1990, pp. 154,155). The consequence of intervention may be, on the contrary, to restrain the full development of the individual and the liberating and creative civic awareness may be subordinated to the ubiquity of national administrative apparatus. The discordant views on whether egalitarian measures, such as social welfare and wealth redistribution, can enhance or compromise the value of human agency and the emancipatory potential of civil society has undermined the formation of a consensus on the curriculum for economics education.

However, the complaint that the curriculum leans towards the 'right' does not concern curriculum advisors 'R' and 'Q'. As they remark:

Without knowing how the market works, we cannot have reflective thoughts on it. Therefore, it is good to learn the rudimentary concepts underlying capitalism. Then, taking into account the current global financial crisis, pupils will not naively regard capitalism as the best way to enhance human well-being. (Interview with 'R')

I am honestly not that bothered by this inconsistency in the curriculum flow. Since the 'pluralistic feature' is heavily stressed in the Committee, the constellation of ideologies in CE is the right response to this aim and the plurality of the modern society. (Interview with 'Q')

Due to the social transition in Taiwan from authoritarianism to democracy, the citizenship curriculum has swung between the right and the left on the ideological spectrum. The conservative forces controlled society until the mushrooming of social activism began in the 1980s. The centre-left gradually gained incremental support and pioneered a variety of social reforms. In line with the objectives of pluralism and the cultivation of pupils' critical and reflective capability as written in the preface of the curriculum, the citizenship curriculum, built upon each curriculum designer's visions and the joint efforts after discussion and negotiation, intends to empower students to realise their full potential and demonstrates the multiplicity of ideological strands which mirror the polycentric nature of a modern society such as Taiwan.

6. Conclusion

Apart from the constant collision of different visions among committee members that shape the contours of the subject, the external forces also, at times, sneaked an invisible hand into the curriculum design process. It can be argued that different political and social groups attempt to bring their aspirations and ideals into the process of knowledge selection.

Although the Chair of the committee set a ‘centre-left’ tone at the outset and curriculum members demonstrated critical insights on curriculum design, within this complex web of internal and external power relationships, struggles between individual curriculum developers swung the guidelines back and forth between right and left on the ideological spectrum. The multiplicity of ideological strands detectable throughout the curriculum, consistent with Geuss’ descriptive sense of ideology (1993, p. 4), reflects the polycentric and multicultural nature of a modern society like Taiwan. Moreover, the Curriculum Committee not only presented the pluralistic aspects of the society, but also acted as the gatekeepers to ensure that the material being included in the written curriculum does not reproduce social inequality and intensify class divides.

Giroux (1981b, p. 98) articulates that schools are often simplistically likened to prisons, asylums, and other oppressive ‘total institutions’, but the counterforces for autonomy and emancipation in schools cannot be overlooked and downplayed. It is likely that education can take on a transformative role of contributing to the cultivation of students capable of critical thinking as long as diverse and reflective views are allowed to come into play in schooling. Generally speaking, critical pedagogy is compatible with the aims of the Taiwanese CE but the process of curriculum construction is by no means free of disentanglement from ideologies, disputes, and complexity. The outright disclosure of the list of curriculum committee members by the Taiwanese government is not common compared to neighbouring East Asian countries, and although the committee chair seems to hold great power in directing the future guidelines, the negotiations and decisions are examined closely by myriads of involved individual and collective forces. While the power relationship can never entirely be eliminated, the possibility of greater consensus is enhanced by opening the dialectical platform to non-curriculum members to contribute their opinions. Uncovering the black box of the Taiwanese curriculum design process and scrutinising the development of discourse on curriculum themes manifests the complex nature of the curriculum creation and reminds us to look at curriculum guidelines through critical eyes.

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AN INVESTIGATION OF USES AND GRATIFICATIONS FOR USING WEB 2.0 TECHNOLOGIES IN TEACHING AND LEARNING PROCESSES

Research Article

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Abstract

Although the use of Web 2.0 in higher education has been a hot topic for the last decade, a lack of guidelines on how to use Web 2.0 tools has constrained their wider adoption. Therefore, understanding why and how educators use Web 2.0 is a necessary step towards promoting their effective use in teaching and learning. This study draws upon the uses and gratifications perspective to explore faculty members' uses of Web 2.0 tools in instructional processes in an international higher education context. We gathered data from 15 faculty members via semi-structured interviews as part of a phenomenological study design applying maximum variation sampling. We analyzed the data using content analysis. The results indicated that the faculty members were selective in their use of Web 2.0 tools and utilized a variety of Web 2.0 tools to gratify their cognitive, affective, social integrative and personal integrative needs in relation to instructional processes.

Keywords: Uses and gratifications theory, Web 2.0 tools, higher education, qualitative study, Web 2.0 use in instruction.

1. Introduction

The use of technology in education to enhance teaching and learning has been a growing field for decades. Emerging Web 2.0 technologies and tools are becoming increasingly popular in education, especially higher education (HE). Several studies have reported positive findings regarding the use of Web 2.0 tools for instructional processes, along with recommendations and concerns to be addressed. The importance and potential of Web 2.0 for HE is stressed in numerous works in the literature (e.g. Aymerich-Franch & Fedele, 2015; Costa, Alvelos, & Teixeira, 2016; DiBella & Williams, 2015; Enskat, Hunt & Hooker, 2017; Procter et al., 2010; Ureña-Torres, Tenesaca-Luna, Arciniegas & Segarra-Faggioni, 2017). However, the uptake of Web 2.0 in instructional processes has yet to reach the expected or desired levels, despite the fact that many researchers believe the future of HE lies in Web 2.0 tools.

For this reason, further investigation of the needs and uses of Web 2.0 tools is needed to understand why and how they are used for teaching and learning, and to promote their effective use in HE. We believe that studying faculty members' uses and gratifications of Web 2.0 tools in instructional processes is an important step in this direction, since their motivations, as well as their personal and pedagogical beliefs, are believed to be crucial for the successful integration of Web 2.0 technologies in education (Celik, Akilli, & Onuk, 2014). We base our

study on a well-known communication theory, the uses and gratifications theory (UGT), in order to understand why and how faculty members select various Web 2.0 tools to satisfy specific needs in their teaching and learning processes, and to gather useful data for designing staff development programs on the effective use of Web 2.0 tools in HE teaching and learning contexts.

2. Background and related work

2.1. Web 2.0 and education

Although the two are based on the same technologies, Web 2.0 differs from its predecessor Web 1.0 in the sense that it allows for two-way communication, with anyone with minimal Web skills able to contribute by creating and publishing content rather than remaining a passive reader. In the field of education, this is associated with endless opportunities for the “production of written speech, discussions, brainstorming, opinions, communication and a social journey to knowledge” (Batsila, Vavougiou, & Ioannidis, 2015, p.15).

This paradigm shift from read-only to read/write Web, with users becoming content generators and engaging with applications, has led to the creation of numerous new Web 2.0 applications. The most popular examples of these comprise of social networking services (SNSs) and social media sites. In the field of HE, relevant technologies and services include blogs, microblogs, wikis, RSS, social tagging, social bookmarking, and media sharing in addition to SNSs and other social media software (Grosbeck, 2009). In other words, a vast array of educational Web 2.0 applications and tools are available, and many other Web 2.0 services exist that can be applied to the field of education in order to enhance the learning experience.

The idea of incorporating Web 2.0 tools, especially SNSs, into education has already been studied by several interdisciplinary scholars, mainly researching the effects of Web 2.0 on learning and teaching besides focusing on limitations and concerns from a pedagogical perspective (Tess, 2013). Anderson (2007) compiled a report reviewing Web 2.0, including the technologies involved; highlighting some of the issues and challenges it poses to HE; and generating some recommendations. The state-of-the-art in research today points out the necessity to increase the maturity, efficiency and safety of these new ways of digital dialogue in order to make them truly useful for education (Celik, Akilli, & Onuk, 2014). Further research is needed to achieve this.

The potential benefits of Web 2.0 have been discussed extensively in the literature. In general, Web 2.0 tools can be utilized to enhance and promote collaborative, effective, social and active learning. Web 2.0 has the potential to support student engagement, persistence, involvement, and social and academic integration, which can, in turn, lead to higher achievement and retention. Grosbeck (2009) outlined some of the potential benefits of Web 2.0 applications, arguing that a new type of Web 2.0-based pedagogy is needed to adopt best practices in teaching and learning with Web 2.0 in HE.

In light of this, many researchers have studied the uses of Web 2.0 tools in modern instructional processes. Several studies have reported positive findings regarding students’ social connectedness and learning experiences following SNS use in classes (Hung & Yuen, 2010); interaction between individual and group actions, which prospectively improved individual knowledge acquirement (Laru, Näykki, & Järvelä, 2012); interest in using Web 2.0 technologies for education (Sandars & Schroter, 2007); motivational processing and outcome processing with Web 2.0 tools (Huang, W & Yoo, 2008); Web 2.0 adoption in HE and perceptions of it as a valuable resource for teaching (Aymerich-Franch & Fedele, 2015); the development of learner empowerment (Ng & Hussain, 2009); student perceptions of

instructors' use of SNS (Facebook) (Enskat, Hunt, & Hooker, 2017); and collaborative learning, perceived learning, and a sense of community (Top, 2012). Other studies have reported that students use Web 2.0 applications to foster both formal and informal learning (Gelmez-Burakgazi, 2012; Yoo & Kim, 2013), and that students who use Web 2.0 tools more frequently in leisure contexts are occasional users in learning contexts and vice versa (Costa, Alvelos, & Teixeira, 2016).

Related research in the field has so far focused mostly on the use of Web 2.0 tools in HE. The most common Web 2.0 tools that have been studied in the literature on instructional processes are SNSs such as Facebook, the video sharing platform YouTube, and the microblogging platform Twitter. The results of studies on blogs, wikis, and podcasts as well as a small number of studies on social bookmarking, social photo-/slide-sharing, professional networking sites and other Web 2.0 tools have been reported. One reason for the extensive use of Facebook, Twitter and YouTube in HE could be their popularity (in terms of the number of active users per platform). The wide use of such software might make them a "natural" choice for many educators or institutions due to their familiarity, ease of use and broad reach with minimal effort. This is in line with the findings of a study suggesting that attitude and perceived behavioral control have a vast influence on the behavioral intention to use Web 2.0 technology, with ease of use, usefulness, and compatibility with Web 2.0 comprising the key elements of attitude (Ajjan & Hartshorne, 2008). Similarly, influence groups are the main social features defining the use of Web 2.0 technologies (Ajjan & Hartshorne, 2008; Kale, 2014).

While numerous studies have examined the effects of Web 2.0 applications in education from students' viewpoints, comparatively fewer studies have examined the needs and uses of them from the educators' standpoint. A number of studies have investigated faculty members' perspectives (Ahmed, 2015), adoption (Ajjan & Hartshorne, 2008) and use (Veletsianos & Kimmons, 2016), as well as perceptions and motivations (Celik et al., 2014), for several Web 2.0 applications. Most of these studies utilized questionnaires or surveys as data collection tools, and only a few explored theoretical frameworks such as the unified theory of acceptance and use of technology (UTAUT) (Onyebuchi, 2009; Toğay, Akdur, Yetişkin, & Bilici, 2013), the integrative theory of motivation, volition, and performance (Huang, W & Yoo, 2008), or motivational theory (Celik et al., 2014). Hence, there is a need for more qualitative studies in this vein. Our study differs from existing studies in that it investigates faculty members' needs and uses for using Web 2.0 technologies by applying a well-known communication theory: UGT.

2.2. Uses and Gratifications Theory (UGT)

Uses and gratifications is a well-known theoretical model that dates back to the 1940s. It was originally developed to provide an explanation for users' motivations and behaviors regarding traditional media like radio, television, and newspapers. Since then, UGT researchers have continued to conceptually refine the theory, adapting it to the present day and changing forms of media communication (Ruggiero, 2000). One significant distinctive property of new media is their interactivity (Quan-Haase & Young, 2010). According to the literature, UGT is suitable for studying online communication media like, in our case, Web 2.0 tools (Ruggiero, 2000).

UGT aims to understand why and how people actively seek out certain media to satisfy certain needs. It assumes that users actively choose and use the media that best fulfill their needs, and that the reasons and motivations for selecting a specific medium will vary from user to user (Katz et al., 1974). Pai and Arnott (2013) advocate that "UGT suggests that cognitive and affective needs motivate people's choices when consuming media and reveals the consequences that follow from needs, motives, and behavior" (p. 1040). Although different

classifications exist within the UGT framework (Katz, Gurevitch, and Haas, 1973; Rubin, 1981), we have chosen to apply Katz, Gurevitch, and Haas' (1973) schema here since it is the most well-known and frequently used. According to Katz, Gurevitch, and Haas (1973), users' motivations to consume media are derived from five specific human needs:

- (1) *Cognitive needs*: Strengthening information, knowledge, and understanding;
- (2) *Affective needs*: Strengthening aesthetic, pleasurable, and emotional experiences;
- (3) *Personal integrative needs*: Strengthening credibility, confidence, stability, and status;
- (4) *Social integrative needs*: Strengthening contact with family, friends, and the world; and
- (5) *Tension release needs*: Escape and diversion (p. 167).

The theory proposes that people actively select and use media for the purpose of gratification. The gratifications a user actually experiences when using a particular medium is referred to as "gratifications obtained", while the gratifications a user expects to acquire from a medium in advance of actually coming into contact with it is referred to "gratifications sought" (or "needs" or "motives") (Karimi, Khodabandelou, Ehsani, & Ahmad, 2014).

When it comes to user behavior and motivation, the UGT is the most common approach to explaining "why" certain media behaviors occur. It considers fundamental psychological needs and builds "theoretical dimensions of user motivations for media use and selection" (Pai & Arnott, 2013, p. 1039). UGT offers a methodological perspective for addressing the matters of media choice and consumption. Pai and Arnott (2013) claim that users' communication medium selection decisions are affected not only by the features of the medium but also by factors related to needs fulfillment and social influences.

As mentioned earlier, UGT has been widely used for studying traditional media for several decades. More recent applications of UGT (for 21st century new media) include mobile phones (Leung & Wei, 2000), Internet usage (Stafford, Stafford, & Schkade, 2004) and social media (Leung, 2013). A number of studies have applied UGT to SNSs. For instance, Joinson (2008) examined the practices of Facebook usage, identifying seven distinctive uses and gratifications obtained from its use: "social connection shared identities, photographs, content, social investigation, social network surfing, and status updating" (p. 1027).

In a qualitative study, Pai and Arnott (2013) examined users' motives for adopting and using SNSs using UGT and laddering interviews, identifying belonging, hedonism, self-esteem, and reciprocity as the four core values users achieve with adopting SNSs. Using a questionnaire and UGT, another study aimed to identify the strongest motivators of Facebook use and evaluate Facebook intensity based on respondents' socio-demographic backgrounds (Richard, Froget, Baghestan, & Asfaranjan, 2013). An exploratory study found that young adults use MySpace and Facebook "to experience selective, efficient, and immediate connection with others for their (mediated) interpersonal communication satisfaction and as an ongoing way to seek the approval and support of other people" (Urista, Dong, & Day, 2009, p. 216). However, none of these studies were in the education domain or explored an instructional process.

A quantitative study using UGT found differences in HE students' motivations to join and use SNSs in Iran, Malaysia, the UK, and South Africa, suggesting that cultural differences may determine the uses and gratifications of social networking (Karimi et al., 2014). In a comparative study of Facebook and instant messaging, researchers used surveys and interviews to collect data from undergraduate students on what motivated them to use these two media and the gratifications they obtained from ongoing use (Quan-Haase & Young, 2010). However, these studies mostly focused on HE students rather than faculty members. Faculty members are usually the ones who integrate Web 2.0 tools into the instructional process,

making their point of view at least as important as students'. Hence, faculty members' uses and gratifications of Web 2.0 tools also need to be investigated.

Another shortcoming of these previous related works is their use of questionnaire-based, quantitative methodologies. They do not investigate "gratifications" sufficiently as there are no qualitative examinations. In our research, we study faculty members' uses and gratifications with regards to various current Web 2.0 tools and technologies from a qualitative perspective. The concurrent use of several Web 2.0 tools suggests that each one satisfies a distinct need, making an analysis of uses and gratifications necessary (Quan-Haase & Young, 2010). Building on this, our study aims to draw upon UGT to understand why and how faculty members use such technologies, which has not been sufficiently investigated before in the HE context. We believe that this study is necessary and will make an important contribution to the literature in this field. Specifically, our research aims to answer the following research questions:

- (1) What Web 2.0 technologies do faculty members use as part of their teaching and learning processes?
- (2) How do faculty members use Web 2.0 technologies as part of their teaching and learning processes?
- (3) What are faculty members' needs for using Web 2.0 technologies in teaching and learning processes?

3. Method

A qualitative phenomenological research design was used in this study to investigate faculty members' uses and gratifications regarding Web 2.0 technologies in teaching and learning processes. Creswell (2007) explains: "A phenomenological study describes the common meaning for several individuals of their lived experiences of a concept or a phenomenon" (p.76). The phenomenon here was the use of Web 2.0 in teaching and learning environments.

3.1. Participants

Data were collected from 15 (6 female, 9 male) faculty members at an international university in Northern Cyprus (see Table 1 for demographics) where the language of instruction is English. Maximum variation was employed as a purposeful sampling strategy to ensure representativeness (Patton, 1990). Participants varied in gender, department, experience, and nationality. Their age ranged from 28-60, and their teaching experience varied between 6-20 years. The participants were from Turkey ($n=7$); Northern Cyprus ($n=5$); Canada ($n=1$); Germany ($n=1$); and Russia ($n=1$).

Table 1. *Demographic Profiles of the Participants (n=15)*

<i>Participants</i>		<i>f</i>
Age	25-30	1
	31-35	2
	36-40	6
	41-45	2
	46-50	3
	56-60	1
Gender	Female	6
	Male	9



Nationality	Turkey	7
	Northern Cyprus	5
	Canada	1
	Germany	1
	Russia	1
Experience	6-10 years	7
	11-15 years	6
	21 years and more	2

3.2. Data collection instrument

A semi-structured interview guide developed by the researchers was used in this research. The interview guide was revised and refined on the basis of expert opinions (one from the Department of Curriculum and Instruction; one from the Department of Computer Education and Instructional Technologies). The final interview guide comprised questions on demographics, uses, and gratifications for using Web 2.0 in teaching and learning processes, previous attendance at staff development programs on using Web 2.0 in education, and suggestions for staff development programs on Web 2.0 use in education.

3.3. Data collection and analysis

Semi-structured interviews were conducted with the participants from March 2017 to June 2017 after obtaining ethical approval from the Human Subjects Ethics Committee. The interviews lasted approximately 25-40 minutes and were audio-recorded. Content analysis of the data was conducted in four stages: coding the data, defining the relevant themes, arranging the data, and interpretation. The data were double-coded by the researchers using a preliminary code list based on the study's research questions, current literature, and UGT. Some example codes were "increasing knowledge retention", "dissemination of materials" and "enhancing communication".

In line with Lincoln and Guba's (1985) four criteria for trustworthiness (credibility, transferability, dependability, and confirmability), this study employed different types of informants, different researchers (triangulation), provided thick description of the phenomena under investigation to allow the study to be repeated, and used diagrams to document "audit trails".

4. Results

Data analysis indicated that faculty members were selective in their use of Web 2.0 tools. They used SNSs (P1, P3, P7, P8, P9, P13), professional networking sites (all faculty members except P3, P5, P15), multimedia sharing sites (all faculty members except P1, P2, P4), the university's Moodle-based learning management system (LMS) (all faculty members), and some other Web 2.0 tools (e.g. Wikipedia, blogs) to gratify their (1) cognitive, (2) affective, (3) social integrative, and (4) personal integrative needs in relation to teaching and learning processes. Figure 1 depicts the Web 2.0 tools most commonly used by the faculty members in parallel with the needs emerging from the data analysis. The Web 2.0 tools utilized to meet each need related to teaching and learning processes are explained under each need.

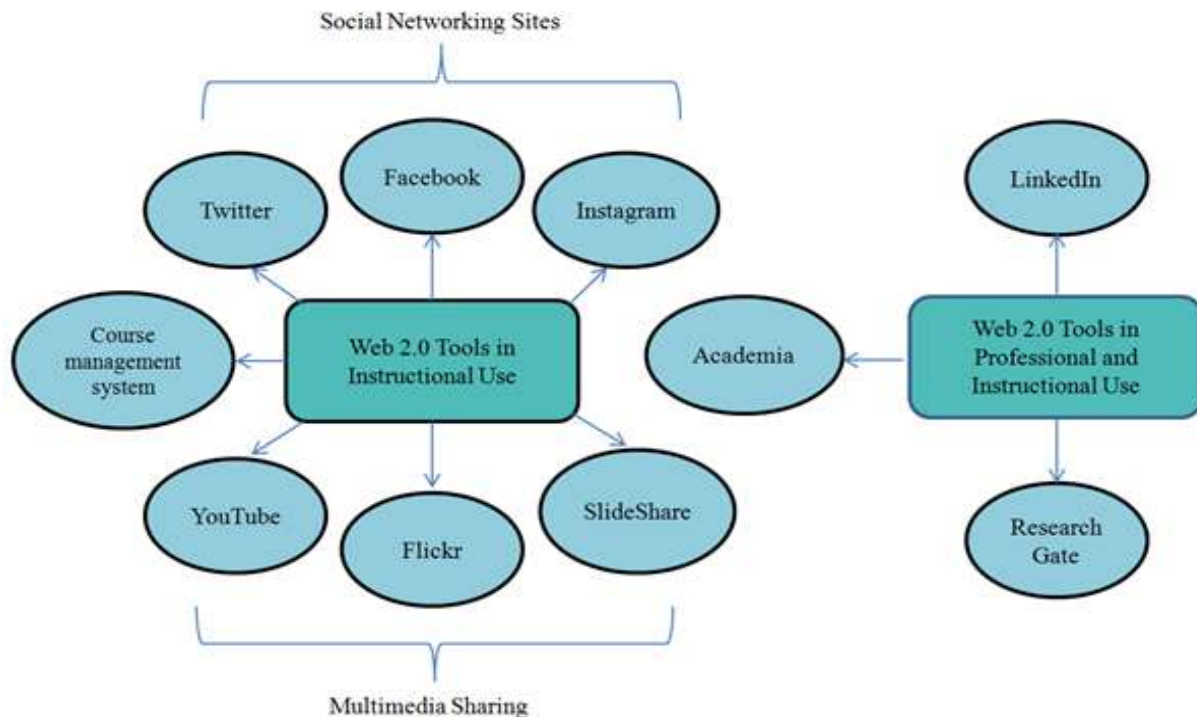


Figure 1. Major web 2.0 tools used by the faculty members.

4.1. Cognitive Needs

The first theme emerging from the data analysis was cognitive needs. The results showed that the faculty members used social networking (i.e., Facebook and Instagram), multimedia sharing (i.e., YouTube, SlideShare) and the university's LMS to satisfy their cognitive needs and thus enrich instruction and supplement the theoretical knowledge they provided in lectures by providing visual and/or audio input to students. The results indicated that this process actively promoted comprehension and the retention of new knowledge and skills. To illustrate, reflecting on the impact of Web 2.0 use on students, P5 stated: "...They [my students] might not remember book knowledge in the exams, but they say that they do remember the [input provided in the] videos... [They say that] this [use of web 2.0] helps them to remember and learn better". Similarly, P7 stated: "You might talk about the damages of gas leaks in Azerbaijan on the environment for a week. However, if you show a 5-minute video demonstrating dead animals and victims, it becomes more striking and catchy".

The results revealed that apart from enriching instruction, faculty members also used the abovementioned tools to disseminate lecture notes and to share and/or encourage students to share articles and course-related materials (e.g., videos, photographs) to enhance their knowledge and comprehension. To illustrate, highlighting the importance of sharing lecture materials in online environments, P12 stated: "Some like to learn better when they listen to a teacher at the class. Some prefer to study at home...they feel updated about the course not only when they come to the lectures but anytime they have".

The results showed that although the use of Web 2.0 tools helped the faculty members satisfy students' cognitive needs, a few concerns should also be taken into consideration when planning the integration of Web 2.0 into teaching. Firstly, the data showed that presenting content via Web 2.0 can create external cognitive load and/or draw the instructors' focus away from essential course content. Some representative quotes are as follows:

Web 2.0 tools cause external cognitive load. There are some elements that might distract students' attention and get students off the topic...If students' self-control and regulation is not sufficient, they might switch to more enjoyable content instead of content that they find boring... Thus, unplanned use becomes a distracting element in education...(P11)

It tends to make things a bit superficial. You tend to pass off all the links and information in the ways you wouldn't do in face-to-face. There would be a lot more focus on certain more essentials, more fundamentals. So I think things tend to get water[ed] down a bit and it can overwhelm students. (P8)

Secondly, the data analysis unexpectedly indicated that ethical rules affect the use of mainly Facebook and Twitter for instructional purposes. For P2 and P8, ethical rules were sensitive points that were particularly violable on Twitter and Facebook. Thirdly, some faculty members (P1, P8, P9, P10, P11) critiqued the reliability of Web 2.0 tools as a source. One notable quotation is as follows: "It is becoming quite difficult to understand what is true and what should be questioned on the internet so that becomes quite an issue as well" (P8). Specifically, P1 and P11 criticized Wikipedia for reliability problems, and P1 stated that he neither used nor suggested Wikipedia to his students due to reliability concerns.

Another concern was found to result from the nature of Web 2.0 tools utilized for instructional purposes and emphasized selecting the right Web 2.0 tools for instruction. To illustrate, Instagram (P1) and Facebook (P8) were found to be less effective in comparison to the other tools. Specifically, P1 commented that Instagram was a superficial tool to use in a teaching-learning environment. Similarly, highlighting the language barrier he faced, P6 claimed that he had difficulty in finding Turkish content on YouTube.

Lastly, one faculty member (P7) expressed concern about her colleagues' attitudes on the use of Web 2.0 tools in instruction. Emphasizing the difference between traditional and non-traditional instruction, P7 stated that she was reluctant to use YouTube videos in class so as not to be criticized by traditional colleagues for excessive use.

4.2. Affective needs

Data analysis showed that some faculty members used Web 2.0 tools to gratify their affective needs. First, the results indicated that sharing published work on professional networking sites (i.e., ResearchGate, Academia.edu) and lecture notes or materials on multimedia sites gave faculty members pleasure and emotional fulfillment. To illustrate, one faculty member stated: "I use ResearchGate and Academia.edu to share my published work on a social platform... I like this because my work is cited and shared makes me happy" (P1). Similarly, reflecting on the use of Cyberdoor, P8 stated:

I still have some slides there and I got this message saying 'You now reached 6000 views or 1000 views.' I don't know how many times people actually looked at it but it kind of inflates your ego a bit.

Interestingly, the results also showed that two faculty members (P3, P8) with expert-level knowledge and interest in Web 2.0 tools utilized Web 2.0 not only to enhance the quality of education but also to fulfill their and their students' emotional needs. The results indicated that even though students sometimes developed negative attitudes towards Web 2.0 use or the specific Web 2.0 tool these faculty members used, they persisted in their use of that tool for a while longer as they wanted to satisfy their own desire to use Web 2.0 in instruction and/or create pleasurable learning environments for their students. For example, P8 said: "So sometimes I just do them [using technology] because it is just fun for me but not so much for my students. It is easy for me and I think it is more motivating to my students as well" (P8).

4.3. Social integrative needs

The results indicated that faculty members used various Web 2.0 tools to satisfy social integrative needs in relation to teaching and learning processes, and thus to strengthen their contacts with their students and/or colleagues. The results showed that faculty members primarily used two major SNS, Facebook and Twitter, to socialize with their students. The results revealed that these sites functioned as pressure-free communication channels and enabled both faculty and students to communicate with each other easily and rapidly in a commonly-used informal environment. Thus, faculty members also utilized these sites to disseminate important information and/or make announcements to large numbers of students, although one faculty member (P8) articulated that Facebook seemed like a waste of time as it had grown so much beyond what he saw as being effective for teaching purposes. Some representative quotes are as follows:

... I have much better communication with my students than I had without social environment because of a language barrier. They don't have that option to talk to me in Turkish [the students' mother tongue] so they don't know what to say when they come to me but in a chat room or in WhatsApp, they have time, they can think, they use emojis. (P8)

For example, there is a strong reluctance of students to come to my office, and it is difficult because some of them travel abroad during their perception of break time like between exams. Therefore, I find it like a virtual classroom experience. (P15)

...I think it [using Web 2.0] is like using their own language. Well, all of us have smartphones. When we send a message through Facebook, it is directly seen on the screen [of mobile]. (P 7)

The results showed that some faculty members also used LinkedIn, a professional networking site, to strengthen their contact with their students, colleagues and/or other professionals in their field. One faculty member (P11) also encouraged his students to use LinkedIn, as he thought connecting to an instructor or professional through a professional networking site allowed the students to become more career-oriented and increased the value of their education.

The data analysis also revealed that apart from social and professional networking, faculty members also used the university's Moodle-based learning management system (LMS) to communicate with their students and/or create discussion environments, although three faculty members (P1, P3, P5) also criticized the tool for its complexity and for not being user-friendly. P3 and P5 specifically highlighted a need for advanced training on how to use the LMS efficiently. One faculty member (P3) also reported using some other Web 2.0 tools (i.e., WordPress, Google Docs, and Answer.fm) to communicate with a large number of students at the same time and learn about their ideas. For instance, Answer.fm was an easy way to respond to students' most frequently asked questions. This helped him develop better communication with his students, as it was quite difficult to have face-to-face interaction with each and every student in large classes.

The results also showed that the use of Web 2.0 to satisfy social integrative needs created some concerns among faculty members, as some students expected their instructors to be accessible 24 hours a day through online networking: "Students expect 24 hours answer but I don't reply them for like 6 or 7 hours. That's a downside" (P8). Another concern was that it was difficult to monitor students in online environments (P7) and that students could become quite informal when communicating via SNSs, which could potentially have a negative impact

on in-class interaction between faculty members and students.

4.4. Personal integrative needs

The final need emerging from the data analysis was personal integrative needs. The results showed that faculty members used Web 2.0 tools to satisfy their personal integrative needs in order to increase their credibility and confidence in teaching. The results indicated that the faculty members mainly used ResearchGate and Academia for rapid access to recent work by other researchers and to update their content knowledge and skills. For P7, LinkedIn served as a kind of business card, allowing her to introduce herself to others and expand her network. This type of use might also fall under social integrative needs, as it refers to communication with others. However, according to Katz et al.'s (1973) classification, this need might also be related to "the need for affiliation".

In addition, faculty members used multimedia sharing (YouTube, SlideShare) and Wikipedia to update their content and pedagogical content knowledge, giving them an increased sense of confidence and credibility in teaching. To illustrate, P13 said: "I use Wikipedia to understand something [better]. I check definitions of some terms and convey them to students". Similarly, P8 believed that the use of new tools enabled him to improve himself. Thus, he has never avoided integrating Web 2.0 tools in teaching and learning environments.

5. Discussion and conclusions

As technology develops beyond our expectations, it is becoming an inescapable part of our lives. In the near future, immersive technologies and artificial intelligence may have a considerable impact on teaching and learning processes. Even now, the use of Web 2.0 tools has significant potential to support and enhance teaching and learning in HE, and it is mostly up to educators to use them to successfully support and enrich their teaching (Ajjan & Hartshorne, 2008). Our study aimed to use UGT to understand faculty members' motives for using Web 2.0 tools in teaching and learning processes, which had not been sufficiently investigated before in the HE context. Understanding faculty members' uses and needs is essential in order to aid them in using Web 2.0 tools in an effective manner, choosing which tool to use when and how, and learning from others' experiences. Specifically, using a phenomenological approach, we aimed to gain insight into what specific Web 2.0 technologies faculty members use as part of their teaching and learning processes, the ways in which they use Web 2.0 technologies as part of their teaching and learning processes, and their needs for using Web 2.0 technologies in teaching and learning processes.

Qualitative interview data revealed that faculty members use a variety of Web 2.0 tools in accordance with the needs established in UGT. It was observed that faculty members use different Web 2.0 tools for different uses and to satisfy different needs and gratifications, in accordance with Quan-Haase & Young's (2010) work claiming that each Web 2.0 tool satisfies a distinct need. For instance, SNSs such as Facebook and Twitter were commonly used for social integrative needs, as they provide a medium for fast and friendlier communication outside of the classroom. However, as suggested by the concerns raised in the data analysis, setting boundaries regarding communication style and response time expectations may require preplanning and clarification. Similarly, a survey of faculty members' perspectives and motivations for Web 2.0 tools use in HE found that while such tools gave them the freedom to work outside the office, thus improving the continuity and sustainability of learning outside business hours, many faculty members had concerns regarding the extra workload and time that this might demand on their end (Celik et al., 2014). Likewise, another study suggested that faculty members are more likely to utilize Web 2.0 for personal sharing and professionally

connecting with peers than to integrate them into their instruction practices due to similar concerns (Manca & Ranieri, 2016).

In general, faculty members mostly use Web 2.0 tools to gratify cognitive and social integrative needs, a finding which is in line with the literature (Wang, Tchernev, & Solloway, 2012). It was observed that faculty members use Web 2.0 tools to strengthen students' knowledge and understanding while trying to engage them more with additional materials and outside the classroom. This study's take-home message is to be cautious about two things: external cognitive overload, so as not to overwhelm students while trying to help them; and planning the integration of Web 2.0 tools into instructional processes prudently in order to minimize distractions, especially with commonly used SNSs.

The study also revealed that some faculty members use Web 2.0 tools to meet their affective needs, whereas personal integrative gratification has more to do with their academic development than instructional processes. For these needs and gratifications, faculty members mostly utilized professional networks such as LinkedIn, ResearchGate and Academia.edu and multimedia sharing platforms such as YouTube and SlideShare. While being liked, shared or cited on a Web 2.0 tool seems to gratify faculty members' affective needs, engaging with these Web 2.0 tools for personal integrative needs allows them to keep themselves up-to-date on research, content and pedagogical content knowledge, thus contributing to their self-confidence and credibility in teaching. Communicating with students via professional networks might also address some of the concerns raised by participants in this study.

In summary, faculty members are aware of and utilize some Web 2.0 tools in their instructional processes. They are selective in their use of tools, using different ones for different purposes; nevertheless, a majority stick to popular, mainstream social media tools. As we are living in an information age, it is important for faculty members to keep up with new technologies, especially educational technologies, and think about how they can be integrated into education, even though this obviously requires a lot of effort.

We believe that this study's findings contribute to understanding faculty members' needs and concerns regarding the use of Web 2.0 tools in an international HE teaching and learning context. Thus, the results of this study could aid in designing and developing staff development programs on the effective use of Web 2.0 technologies in HE contexts. We also believe that guidance for faculty members on which tools to use for what purposes, how to integrate these tools into their pedagogical structure, and how to handle things like reliability, credibility, privacy, informality, ownership and many other issues that arise when using Web 2.0 tools will make Web 2.0 usage in HE easier and more effective, and thus stimulate wider use.

This study is subject to several limitations. First, all faculty members in this study were from the same university. Extending the study by collecting data from other universities would provide a basis for interesting comparison studies that would allow us to see if there are any differences in Web 2.0 technology use across different faculties or between research-oriented versus teaching-oriented institutions. Another limitation is the wide variety of Web 2.0 technologies available, whose use and impact on instructional processes might differ. In our study, we tried to focus on a subset of some of the most popular technologies and grouped several of them into thematic categories in our interviews to keep things simple.

Our findings offer some insights for future research. Firstly, a natural extension of this study would be to conduct observations in faculty members' classes and analyze the instructional materials they use to better understand how Web 2.0 tools are utilized in instruction. The use of think-aloud protocols to depict how faculty members plan to use Web 2.0 tools in teaching and learning processes is also an intriguing possibility that could be investigated in further

studies. It would also be interesting to hold semi-structured interviews with students and faculty members simultaneously to derive an understanding of the two groups' similar and contradicting motives for using Web 2.0 tools in teaching and learning.

ENDNOTE

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DEVELOPING INSTRUMENTS FOR STUDENT PERFORMANCE ASSESSMENT IN PHYSICS PRACTICUM: A CASE STUDY OF STATE SENIOR HIGH SCHOOL OF MAGELANG

Research Article

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Abstract

Assessment of practicum activities has not been performed maximally in which it is limited to unstructured observations without applying assessment instruments and it only covers some skills oriented aspects. For that reason, this research aimed to develop instruments for student performance assessment in physics practicum in State Senior High School of Magelang. This research development study was based on the Borg & Gall model. There were three basic steps followed; Phase 1 (problematization), Phase 2 (product creation), and Phase 3 (product testing) that consists of a limited experiment and a large group experiment. In the study, Aiken formula was used for the validation purposes and the results showed that the instrument had a high degree of content validity with the Alpha coefficient value of 0.948. Based on the Total Variance Explained table, the component column showed that there were six factors representing the variables. Accordingly, the instrument of this research was found feasible to be used for high school student performance assessment in physics practicum.

Keywords: Instrument, performance assessment, physics practicum

1. Introduction

Learning is inextricable with assessment since both aspects are important efforts for education management. Efforts to improve education quality can be done by increasing the quality of learning and assessment system. The quality of learning can be examined from the assessment results. Furthermore, a good assessment system will encourage educators to structure good learning and teaching strategies. At the same time, improving education quality requires assessment system improvement.

Regulation of the Minister of Education and Culture Number 54 Year 2013 on Graduates Competency Standards (SKL) (Nomor, 2013) explains the expected aspects of high school graduates' competency, that is, students should have a balance between soft skills and hard skills covering aspects of attitude, skills, and knowledge. In an attempt to achieve these objectives, the curriculum requires the learning activities in each level of education - especially high school- to implement a scientific approach. This is to support the students' competencies such as attitudes, skills, and knowledge. The scientific approach applied in the learning activities involves observing, asking, reasoning, willing to try, and building networks in all subjects, including physics.

According to Abu Hamid (2011), the nature of physics as a part of natural science is in the realm of process and product. Process and product have an equivalent importance level in physics education, both in learning and assessing the results of the learning activities. Having said that, examination and assessment need to be executed in both process and product. The process of learning physics is often related to the skills in performing the tasks of observation, measurement, experiment or practicum, data analysis, etc. Assessing the learning activities require an appropriate type of assessment, that is, a performance assessment which can examine students' skills.

Assessment is a systematic activity for collecting, analyzing, and presenting information in an attempt to accurately interpret students' learning success (Fitzpatrick, Sanders, & Worthen, 2004; Kartowagiran, 2014). Arikunto (2004) suggests that assessment is an act of giving value in educational or school activities. Teachers and other teaching staffs conduct assessments in order to see whether their efforts have reached the goal. Whereas, Angelo (1991) argues that class assessment is a simple method to collect feedback at the beginning and after learning process and to observe how well students have absorbed the learning materials. Examining the aforementioned explanations, it can be said that assessment is a systematic process to determine the values of objectives, activities, decisions, performance, processes, people, objects, and others. A good assessment tool measures the success of the educational process in a precise and accurate way.

Assessment activities in the process of learning physics have not applied standard guidelines. The assessment is solely based on estimations rather than evaluations, and it tends to be subjective. A subjective assessment creates a particular difficulty for teachers to set up an appropriate follow-up action. To overcome this, an instrument with precise and clear criteria is needed to anticipate subjectivity in the assessment. It can be said that using a valid instrument may lead the results of the assessment reliable, at the same time, inform the actual conditions of the students' ability.

Performance assessment is an appropriate way to assess skills-related aspects (Hibbard, 1996; Nitko, 1996). Performance assessment is a distinctive assessment aiming to obtain data about students' ability in carrying out their tasks for each learning topics. To achieve these goals, the 2013 Curriculum requires the learning activities in each level of education, especially high school, to implement a scientific approach that supports students' competencies covering attitudes, skills, and knowledge. Referring to the 2013 Curriculum, a performance assessment instrument with a scientific approach is an urgent call. This is to facilitate teachers in measuring the learning activities and outcomes of the learners.

Performance assessment is an appropriate way to assess skills (Marzano, Pickering, & McTighe, 1993; Van Der Vleuten & Schuwirth, 2005; Wass, Van der Vleuten, Shatzer, & Jones, 2001). Performance assessment is not only measuring the learning outcomes but also providing clearer information about the learning activities. The assessment is based on the performance in completing a given task or a case problem such as presenting knowledge, using reasoning, demonstrating skill or product, and attitude/affection (Mehrens, 1992). Learners are provided with a task to show their ability in completing it.

According to Badrun Kartowagiran (2009), a research instrument is a tool used to collect research data in both qualitative and quantitative data. Qualitative data can be images, words, and/or other objects that are non-numerical. Whereas, quantitative data is a numerical-related data. In qualitative research, the main instrument is the researcher. Having said that, what is meant by research instrument in this study is the quantitative research instrument.

A good instrument needs to be valid and reliable. The instrument validity is about how far the instrument can measure what it should be measured. The instrument validity is seen from a specific purpose, that is, the validity of an instrument to measure attribute 'A' does not necessarily applies to attribute 'B'. Following this, an instrument must be reliable in term of the consistency of its measurement. For example, the test score or other valuation results remain unchanged from one measurement to another.

A closer look at the factual conditions in the field, the assessment of practicum activities has not been performed optimally. In the preliminary stage, the results of interviewing one of the teachers at the State Senior High School 1 Magelang and State Senior High School 2 Magelang show that their laboratory facilities are complete enough to support practicum activities. However, the assessment of practicum activities is only limited to unstructured observations without applying assessment instruments. It only covers a few skill aspect. Moreover, some teachers only use test scores to measure students' ability without providing a fair and open disclosure of the grading procedure. The grade is heavily based on the teacher's judgment without a valid assessment guideline. Studying this, it is evident that the lack of facilities lies on the absence of a valid instrument in assessing the students' performance in learning physics practicum, which later aims to develop their potentials in the long run.

Studying the aforementioned reasonings, the researchers are interested in researching "Developing Instruments for Student Performance Assessment in Physics Practicum: A Case Study of Magelang Senior High School". Specifically, the research questions of this study are (1) How are the structures of the performance assessment instruments used for assessing freshmen students in physics practicum at the State Senior High School of Magelang? (2) How are the characteristics of the performance assessment instruments used for assessing freshmen students in physics practicum at the State Senior High School of Magelang? and (3) How are the students' responses to the performance assessment instruments used for assessing freshmen students in physics practicum at the State Senior High School of Magelang?

2. Methodology

This study is a research development using Borg and Gall model. There were three basic steps that should be carried out by the researchers. These were: (1) Phase 1 (problematization) consisted of compiling instrument specification; (2) Phase 2 (product creation) consisted of creating product/instrument followed by supervisor consultation and assessment instrument review; and (3) Phase 3 (product testing) consisted of a limited experiment and a large group experiment in an attempt to check the readability, practicality, usage, response of the students and teachers as well as the interpretation of the measurement results.

The subject of this research was the performance assessment instrument for high school students. Whilst the object of this research was the students of the State Senior High School of Magelang. The obtained data from the students and teachers are presented in the following table.

Table 1. Total of the experiment subject

Assessment Stage	Total		
	Total of High Schools Involved	Assessor (teachers)	Assessor (students)
Limited	1	3	90
Extended	3	3	500

Data collection was conducted through validation, questionnaire, observation, and documentation. This study applied data analysis techniques of product feasibility analysis and questionnaire analysis about the teacher's response; which included questionnaires of readability, practicality, and student's response. The results of data collection were analyzed by using the qualitative method, while the instrument development data was analyzed quantitatively by finding its validity and reliability. Based on the instrument used, the data analysis applied factor analysis. It began with Exploratory Factor Analysis with the KMO criteria of ≥ 0.5 , and the loading factor was in accordance with the Exploratory Factor Analysis (EFA) criteria.

3. Results & Discussion

3.1 Preliminary Results

During the preliminary stage, the researchers interviewed physics teachers at 3 different State Senior High School of Magelang. All of the three physics teachers provided similar answers. Accordingly, it can be concluded that:

The school system still applies a simple assessment in which the teachers tend to grade practicum activities based on reports only.

The practicum facilities in all three schools are good enough. However, the facilities are rarely used, only when students have a practicum class.

Assessment of the practicum activities is inadequate. An up-to-date practicum assessment is an urgent call.

Based on the results of interviewing the teachers and analyzing the assessment instruments, the implementation of physics practicum is not supported by the implementation of student performance assessment in an effective way. The limitation of teachers in observing a large number of students has led the teachers to rely on their memory to determine the student's performance. In other words, the assessment is not accurate because it is not conducted when the students directly show their performance. The results of the interview and observation of the assessment instruments indicate that it is necessary to develop student performance assessment instruments, specifically on the course of physics practicum.

3.2 Stage 1

In the early stages of creating the instruments, the researchers first formulate a draft to be further consulted with the supervisor. After making the draft, the researchers then develop an assessment rubric by setting indicators and scoring system. Subsequently, the researchers create an assessment sheet for physics practicum.

3.3 Stage 2

At the early stage, researchers have finished formulating the performance assessment instrument by making drafts and assessment sheets which have been approved by the supervisor. The subsequent process is Phase II in which the researchers validate the instrument together with 3 experts as approved by the supervisor. This is to see to what extent the instrument content represents the conceptual frameworks. To do this, Aiken formula is applied. The researchers appoint 3 physicists. Referring to the assessment data from the 3 experts, the researchers then perform data analysis by using Aiken formula (Aiken, 1980).

$$V = \frac{\sum s}{[n(c-1)]} \quad (1)$$

$$V = \frac{54}{[7(3(4-1))]} = \frac{54}{63} = 0.857 \quad (2)$$

Analysis results of the sub-indicator accuracy score on indicators

$$V = \frac{\sum s}{[n(c-1)]} \quad (3)$$

$$V = \frac{233}{[28(3(4-1))]} = \frac{233}{252} = 0.924 \quad (4)$$

A closer look at the analysis results of the experts using Aiken formula, it can be concluded that the analysis result coefficient of the indicator accuracy score on variables and dimensions is 0.857. Whilst, the analysis result coefficient of the sub-indicators accuracy score on indicators is 0.924. Therefore, the formulated instrument is quite good with an adequate content validity. However, the experts suggest to do some revisions, especially the use of language in the instrument.

3.4 Stage 3

3.4.1 Experiment of the Preliminary Product

The experiment of the preliminary product has been validated by the experts under a supervision of the supervisor. Subsequently, the researchers perform an initial test to 90 freshmen students with a representative of one class of each high school. Also, an instrument assessment was done by 3 teachers in an effort to provide suggestions about the upcoming instrument.

In the initial product analysis phase, the assessment analysis of the 3 teachers is conducted by using Ebel formula (Ebel, 1951). This is also applied to instrument validity with factor analysis and instrument reliability, using Cronbach Alpha (Cronbach, 1951) with SPSS.

The following is the result of the instrument analysis and the average of reliability coefficient of the three raters using Ebel formula (Ebel, 1951):

$$\rho_{xx} = \frac{(0,524-0,143)}{0,524} = 0.727 \quad (5)$$

The calculation results indicate that the results of reliability analysis, assessed by the 3 teachers using Ebel formula, is 0.727. These results show that the reliability of the inter-rater is considered to be in a high category.

Instrument validity uses factor analysis. Results of the KMO analysis more than 0.5 is 0.780, therefore, the instrument can be further processed with factor analysis. The anti-image correlation explains that all variables from the first to the seventh variable is more than 0.5 (> 0.5), that are, 0.741, 0.829, 0.725, 0.746, 0.793, 0.878, 0.710. For that, none of the items is aborted.

The instrument reliability using the Cronbach Alpha is 0.849 > 0.7. Thus, it can be said that the variable is reliable. Based on the analysis of the preliminary product experiment and consultations with the supervisors, the initial instrument which the researchers formulate is considered to be reliable. However, the experts and supervisors suggest to add some aspects to make a better improvement. After finalizing the analysis under the supervision of the supervisor about the preliminary product as well as considering experts' suggestion, the next step is product revision.

3.4.2 Experiment of the extended products

After the revision, the researchers conducted a large group experiment with 500 freshmen students from 3 different high schools. The following is an explanation of the analysis results of the assessment instrument. The instrument validity with factor analysis and the instrument reliability applies Cronbach Alpha by using SPSS. The following is a chart of the instrument analysis results.

3.4.2.1 Instrument validity

Table 2. KMO and Bartlett Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.747
Bartlett's Test of Sphericity	Approx. Chi-Square	3704.498
	Df	136
	Sig.	0.000

Table 2 indicates that the results of the KMO more than 0.5 (> 0.5) is 0.747. Therefore, the instrument can proceed with factor analysis.

Table 3. Anti-Image correlation

		Anti-image Matrices																
		VAR 01	VAR 02	VAR 03	VAR 04	VAR 05	VAR 06	VAR 07	VAR 08	VAR 09	VAR 10	VAR 11	VAR 12	VAR 13	VAR 14	VAR 15	VAR 16	VAR 17
Anti-image Covariance	VAR01	.416	-.189	-.113	-.031	.002	-.071	.028	.048	.009	-.036	.083	.013	.001	.002	-.056	.039	-.040
	VAR02	-.189	.390	-.138	-.056	.023	-.035	-.005	-.006	.018	-.007	-.054	-.057	.006	-.015	.031	-.061	-.007
	VAR03	-.113	-.138	.507	.017	.010	.005	-.072	-.049	-.030	-.005	-.012	-.002	-.011	-.027	.040	.036	-.056
	VAR04	-.031	-.056	.017	.355	-.282	.002	.010	-.033	-.017	.007	.014	.010	-.039	.022	.013	.004	.009
	VAR05	.002	.023	.010	-.282	.386	-.014	.005	.004	-.009	.012	-.003	.001	.025	-.026	.003	.019	-.015
	VAR06	-.071	-.035	.005	.002	-.014	.437	-.225	-.189	.022	.025	-.016	-.076	-.031	.026	.031	.008	.010
	VAR07	.028	-.005	-.072	.010	.005	-.225	.537	-.100	-.073	-.001	.015	.051	-.003	-.002	-.054	.050	.029
	VAR08	.048	-.006	-.049	-.033	.004	-.189	-.100	.616	.014	.018	-.025	.078	-.040	.014	-.017	-.013	-.019
	VAR09	.009	.018	-.030	-.017	-.009	.022	-.073	.014	.592	-.134	-.071	-.017	.007	.019	.040	-.133	-.083
	VAR10	-.036	-.007	-.005	.007	.012	.025	-.001	.018	-.134	.381	-.219	.024	-.030	-.012	-.081	.039	.073
	VAR11	.083	-.054	-.012	.014	-.003	-.016	.015	-.025	-.071	-.219	.377	-.041	.026	-.023	-.021	.092	-.081
	VAR12	.013	-.057	-.002	.010	-.001	-.076	.051	.078	-.017	.024	-.041	.724	-.232	-.011	.000	.040	.009
	VAR13	.001	.006	-.011	-.039	.025	-.031	-.003	-.040	.007	-.030	.026	-.232	.532	-.289	-.047	.015	-.006
	VAR14	.002	-.015	-.027	.022	-.026	.026	-.002	.014	.019	-.012	-.023	-.011	-.289	.673	.005	-.052	.020
	VAR15	-.056	.031	.040	.013	.003	.031	-.054	-.017	.040	-.081	-.021	.000	-.047	.005	.330	-.180	-.198
	VAR16	.039	-.061	.036	.004	.019	.008	.050	-.013	-.133	.039	.092	.040	.015	-.052	-.180	.621	-.033
	VAR17	-.040	-.007	-.056	.009	-.015	.010	.029	-.019	-.083	.073	-.081	.009	-.006	.020	-.198	-.033	.385

Studying the explanation of anti-correlation images, it is evident that none of the items is aborted. The table shows all variables, from the first to the seventh variable, are more than 0.5 ($> 0,5$). These are: (1) the first variable is 0.788; (2) the second variable is 0.813; (3) the third variable is 0.872; (4) the fourth variable is 0.588; (5) the fifth variable is 0.553; (6) the sixth variable is 0.761; (7) the seventh variable is 0.768; (8) the eighth variable is 0.813; (9) the ninth variable is 0.842; (10) the tenth variable is 0.729; (11) the eleventh variable is 0.733; (12) the twelfth variable is 0.728; (13) the thirteenth variable is 0.713; (14) the fourteenth variable is 0.705; (15) the fifteenth variable is 0.735; (16) the sixteenth variable is 0.673; and (17) the seventeenth variable is 0.781. Therefore, it can be concluded that none of the items is aborted

Table 4. *Commonalities*

	Initial	Extraction
VAR01	1.000	.599
VAR02	1.000	.802
VAR03	1.000	.814
VAR04	1.000	.797
VAR05	1.000	.792
VAR06	1.000	.707
VAR07	1.000	.767
VAR08	1.000	.720
VAR09	1.000	.694
VAR10	1.000	.791
VAR11	1.000	.749
VAR12	1.000	.717
VAR13	1.000	.548
VAR14	1.000	.772
VAR15	1.000	.628
VAR16	1.000	.889
VAR17	1.000	.890

The value of commonalities indicates to what extent a variable explains a factor. The result shows that the highest variable value is in variable 17 with a value of 0.890; meaning that variable 17 can explain a factor of 89,0%. While the lowest variable value is in variable 1 with a value of 0.548; meaning that variable 1 can explain a factor of 54,8%. The result of the aforementioned 17 variables shows a value of more than 50% ($> 50\%$). To sum up, all variables can explain the factors.

Table 5. Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,439	26,405	26,405	4,489	26,405	26,405	2,419	14,227	14,227
2	2,648	15,578	41,983	2,648	15,578	41,983	2,337	13,750	27,977
3	1,582	9,307	51,290	1,582	9,307	51,290	2,157	12,690	40,667
4	1,545	9,089	60,379	1,545	9,089	60,379	2,036	11,979	52,646
5	1,264	7,437	67,816	1,264	7,437	67,816	1,921	11,297	63,944
6	1,147	6,745	74,561	1,147	6,745	74,561	1,805	10,617	74,561
7	.723	4,255	78,816						
8	.613	3,605	82,421						
9	.507	2,984	85,405						
10	.475	2,794	88,200						
11	.406	2,386	90,585						
12	.379	2,227	92,812						
13	.314	1,848	94,661						
14	.298	1,754	96,415						
15	.215	1,264	97,678						
16	.204	1,199	98,878						
17	.191	1,122	100,000						

The Total Variance Explained Table is the obtained results that determine the number of possible factors to be established. Based on the Total Variance Explained Table, it can be seen that the component column shows six factors representing the variables. The next step is specifying the matrix component, followed by a rotation of the matrix component. The results are presented in the following table.

Table 6. Rotated component matrix

	Component					
	1	2	3	4	5	6
VAR01	.708	.060	.080	.292	.008	.056
VAR02	.871	.115	-.004	.092	.125	-.075
VAR03	.882	.096	.063	.070	.118	-.063
VAR04	.023	.849	.129	.176	.089	.138
VAR05	.134	.832	.179	.080	.152	.143
VAR06	.164	.776	.256	.032	.104	-.014
VAR07	-.029	.302	.803	-.078	.131	.085
VAR08	.110	.171	.823	.009	.026	-.019
VAR09	.042	.073	.816	.096	.032	.106
VAR10	.387	.136	.063	.775	.122	-.066
VAR11	-.025	-.008	-.040	.863	.027	-.036
VAR12	.384	.272	.062	.699	.054	.003
VAR13	.095	.189	.007	-.111	.700	-.005
VAR14	.084	.089	.156	.135	.843	.052
VAR15	.056	.022	.016	.130	.779	.021
VAR16	-.049	.174	.091	-.038	.048	.919
VAR17	-.032	.048	.058	-.041	.015	.939

Based on the above table, the 17 variables are grouped into 6 factors which described in the following:

Factor 1: variable 1 (students are capable to choose the practicum instruments), variable 2 (students are capable to distinguish the required procedure in accordance with the practicum guideline), variable 3 (students are capable to identify the required instruments in accordance with the practicum guideline).

Factor 2: variable 4 (students get prepared for the practicum by reading the practicum guideline), variable 5 (students are capable to understand every step of the procedure), variable 6 (students are enthusiastic in carrying out the practicum activities).

Factor 3: variable 7 (students are willing to engage in practicum activities without depending on other group's assistance), variable 8 (students are capable to follow the instruction in accordance with the practicum guideline): variable 9 (students are capable to quickly respond every instruction in accordance with the practicum guideline).

Factor 4: variable 10 (students are capable to assemble the practicum instruments in accordance with the practicum guideline), variable 11 (students are capable to do observation during the practicum), variable 12 (students are capable to do measurement activities during the practicum).

Factor 5: variable 13 (students are capable to record the practicum data), variable 14 (students are capable to participate in a group setting), variable 15 (students are capable to observe their friend's skill during the practicum).

Factor 6: variable 16 (student are capable to analyze data), variable 17 (students are capable to draw a conclusion).

3.4.2.2 Instrument reliability

The reliability value of Cronbach's Alpha is shown in the following table:

Table 7. *Instrument reliability*

Cronbach's Alpha	N of Items
0.948	17

Table 7 indicates the value of the Alpha coefficient of $0.948 > 0.6$. It can be concluded that the variable is very reliable. The value of Cronbach's Alpha reliability is presented in the following table:

Table 8. *Reliability of the Cronbach's Alpha*

Value of Cronbach's Alpha	Reliability Level
0.0 - 0.20	Less Reliable
>0.20 - 0.40	Slightly Reliable
>0.40 - 0.60	Quite Reliable
>0.60 - 0.80	Reliable
>0.80 - 1.00	Very Reliable

Source: *Hair et al. (Hair, 2010)*.

What distinguishes this study from other previous studies lies in the application of the scientific approach in accordance with the 2013 curriculum and the Education and Culture Ministerial Decree No.104 year 2014 (Penyusun, 2014). Thus, this study may be useful in all high school physics courses due to its suitability for the student performance assessment.

4. Conclusion

The formulation of the assessment instruments is carried out through several stages: preliminary studies, limited experiments, and product testing. The structures of the performance assessment instrument with a performance assessment indicator include several aspects namely perception, preparation, action response, complex mechanism, communication, and creativity. A closer look at the first experimental test about student's performance in the practicum activities, the result is considered to be good enough yet it still needs a little improvement. The revisions are based on the input of the experts, teachers, and supervisors; this contributes to making the assessment instrument valid and reliable. The instrument can be used to assess the performance of high school students.

This study suggests the future research to develop instruments for other aspects in the course of physics. This instrument should be further applicable in other schools to see whether teachers have already met the assessment standards or they still use an outdated assessment.

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EXAMINING STUDIES ON THE FACTORS PREDICTING TEACHERS' JOB SATISFACTION: A SYSTEMATIC REVIEW

Research Article

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EXAMINING STUDIES ON THE FACTORS PREDICTING TEACHERS' JOB SATISFACTION: A SYSTEMATIC REVIEW

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Abstract

This study focuses on the factors that predict teachers' job satisfaction. Twenty-seven out of 206 studies were examined based on various criteria. The studies were synthesised in accordance with systematic review methods. The studies that investigated teachers' job satisfaction and were conducted in the Turkish context were retrieved from WOS, ERIC, SCOPUS and ULAKBİM databases, and then the selected studies were analysed. In the analyses, themes and subthemes related to the predictive variables were formed. As a result, three themes that positively predicted teachers' job satisfaction were highlighted. These themes were administrators' behaviours, individual variables and organisational variables. The results showed that a strong school culture in which support, trust, justice and communication are established is a decisive factor in ensuring teachers' job satisfaction. Additionally, teachers' beliefs in their professional competence and having psychological well-being were found to be important factors for their job satisfaction.

Keywords: Teachers' job satisfaction, systematic review, factors affecting job satisfaction, school culture

1. Introduction

Job satisfaction is of importance for employees' happiness and the organisation's effectiveness and efficiency (Luthans, 2010). In the literature, job satisfaction is defined as the content and happiness (Davis & Bordieri, 1988; Hackman & Oldham, 1976), emotional states that please individuals (Locke, 1969), employees' attitudes towards their professional satisfaction (Spector, 1997) and the feeling of success achieved in their job (Kaliski, 2007) which are experienced as a result of gaining job experience and fulfilling their duties. Besides, job satisfaction is a compound of psychological, physiological and environmental conditions that ensure satisfaction (Aziri, 2011; Hoppock, 1935). It can be argued that there are similarities between the definitions of job satisfaction that can be defined as positive feelings about one's job or duties.

Teachers' job satisfaction is emotional reactions to their duties or instructional roles (Skaalvik & Skaalvik, 2011). In most of the studies on teachers' job satisfaction, the motivating and hygiene factors in Herzberg's (1959) dual-factor motivation theory are commonly used. Motivating factors include intrinsic motivators such as characteristics of the job, success, recognition, taking responsibility and creating opportunities. Hygiene factors that cause dissatisfaction include employees' working conditions, and organisational supervision and interpersonal relationships (Bogler, 2001). In this respect, Dinham and Scott (2000) describe the sources of job satisfaction and dissatisfaction as (a) teachers' intrinsic rewards, (b) school-based factors, and (c) out-of-school factors. Teachers' intrinsic rewards are related to their



working with students and following students' development. School-based factors include the relationships between colleagues, parents and school leaders, and oppressive and destructive student behaviours. Out-of-school factors contain those such as changes in education and the evaluation of schools by independent bodies (Skaalvik & Skaalvik, 2011).

The concept of job satisfaction that falls within organisational psychology and sociology (Arnold, Cooper & Robertson, 1998; Matiaske & Grözinger, 2011) is based on the works “*Management and the Worker*” by Roethlisberger and Diekson, and “*Job Satisfaction*” by Hoppoek that were published in 1930s (Locke, 1969). Researchers suggest that global and mixed approaches are influential on the measurement of job satisfaction. The global approach refers to individuals' general emotional reactions to their job, while the mixed approach is related to individuals' and their colleagues' working conditions, the nature of the job, organisational politics and processes, and attitudes towards pays and supervision (Bruck, Allen & Spector, 2002; Spector, 1997). On the other hand, theories of content and needs, process theories and situational theories have been influential on the theoretical development of job satisfaction (Green, 2000). It can thus be inferred that different theories and models laid the foundations for the theoretical bases of job satisfaction.

In terms of the theories of content and needs, job satisfaction was based on Maslow's (1943) *Hierarchy of Needs* and Herzberg's (1966) *Dual-Factor Theory*. Needs theories mostly focus on personal needs that match professional satisfaction (e.g. eating, drinking and housing) or values (e.g. respect, recognition and success). Content theories concentrate on the factors that initiate, direct, maintain and halt human behaviours (Amos, Pearson & Ristaw, 2008). Process theories are fed by theories including Adams's (1965) “*Equity Theory*” and Bandura's (1977) “*Social Learning Theory*”. These theories aim at explaining the relationships between values, needs and expectations that constitute motivation and job satisfaction (Amos et al., 2008; Green, 2000). Process theories emphasise cognitive thinking processes, and employees' motivation and satisfaction (Ololube, 2006). They determine individuals' perceptions in work environments and the way in which they interpret and understand events (Kerschen, Armstrong & Hillman, 2006). Consequently, the theoretical bases of job satisfaction spread across a wide area in the literature.

In addition to the theoretical bases mentioned above, situational models that form the third theoretical framework for job satisfaction are associated with Locke's (1976) *Range of Affect Theory*, and Hackman and Oldham's (1976) *Job Characteristics Model*. These theories focus on job characteristics (e.g. the nature and quality of the job), and organisational characteristics (the organisations' basis leadership and promotion criteria) (Glisson & Durick, 1988). Situational models are determined by situational characteristics and events. Employees call upon situational characteristics while evaluating the working conditions of the organisation and the wage conditions before joining the organisation. Situational events include positive (e.g. respecting employees and rewards like praises) and negative (e.g. disrespect among colleagues and complex work processes) events that employees encounter when they start the job (Glassman & McAfee, 1992). Based on these models, it can be argued that various characteristics of individuals and organisations are effective in promoting job satisfaction.

The antecedents and consequences of job satisfaction were examined in international studies in the field of education. In these studies, job satisfaction was explored with variables such as motivation, self-efficacy perception, working conditions, stress and school culture (e.g. Klassen, Usher & Bong, 2010; Koustelios, 2001; Ma & MacMillan, 1999; Skaalvik & Skaalvik, 2011; Skaalvik & Skaalvik, 2009; Somech & Drach-Zahavy, 2000; Taylor & Tashakkori, 1995; Van Houtte, 2006). In the Turkish context, many studies that examined the relationship between job satisfaction and different individual or organisational characteristics

have been conducted since 2000s. In Turkey, job satisfaction was often studied with relation to the concepts of leadership, self-efficacy, administrative behaviours, job performance and commitment (e.g. Çevik, 2017; Güngör, 2016; Okçu & Çetin, 2017; Şeşen, Tabak & Arlı, 2017; Taş, 2017; Türkoğlu, Cansoy & Parlar, 2017; Uzun & Özdem, 2017). As can be inferred from these studies, job satisfaction is seen as an important variable in schools.

Although there are studies on variables that can be antecedents to job satisfaction across the world, no studies have been encountered which examine and interpret the findings regarding the variables that have potential effects on job satisfaction in the Turkish context. In this regard, this study sets out to fill a gap and extend the literature in this sense. Additionally, reporting the common findings in different studies can provide practitioners certain practical results in making evidence-based policies and improving teachers' job satisfaction. Presenting a synthesis of the data provided by evidence-based studies can be of significance for educational stakeholders. By means of such results, teachers' practising their profession more contentedly can be facilitated at the organisational level. As for teachers, such information can raise their awareness. Moreover, researchers can make certain decisions regarding the variable that they can use in their studies by seeing the results of different studies as a whole. Consequently, this study aimed at revealing the factors that affect teachers' job satisfaction in Turkey.

2. Method

The factors that predict teachers' job satisfaction were examined in this study. Systematic review refers to synthesising the findings of many different studies in a way that is clear, transparent, replicable and accountable (Oakley, 2002). Systematic review or examination is a method of defining and synthesising research findings regarding a certain topic. In systematic reviews, empirical findings are brought together based on predetermined criteria to answer a research question. In this methodology, clear and systematic methods are used to minimize researchers' subjective judgements. Systematic review studies enable researchers to make a synthesis of the studies on a topic and determine the areas that need to be explored, and practitioners and policy-makers to take measures for possible or existing problems (Higgins & Green, 2011). Systematic review is commonly used as a methodology in health sciences, and there have been discussions about its use in educational sciences. Educational researchers view systematic review studies as significant. This is because such studies facilitate reaching research findings as a whole (Clegg, 2005; Hammersley, 2008).

2.1. Selection of studies

Systematic reviews consist of sections that are search strategy, inclusion criteria, scanning, gathering and defining the data, demonstrating the quality of the studies included, and synthesis of the findings, respectively (Karaçam, 2014). In the first step, the selection criteria and databases were determined. Then, the criteria for including the studies in the analysis and the scanning process were followed. In the last step, the quality of the studies was examined with a synthesis of their findings.

In according with the research aim, studies were searched in the databases including Web of Science, ERIC, SCOPUS and ULAKBIM. In the data gathering process, the query “*teachers' job satisfaction*” was searched in the databases concerned. These searches were done in both Turkish and English.

At this point, the following criteria were determined by the researchers, which was also based on expert opinion: (i) being a full-text empirical paper in the field of education, (ii) being published in national and international journals between 2000-2017, (iii) being an original study, (iv) focusing on teacher job satisfaction, (v) reporting findings related to the research aim, (vi) being conducted in educational institutions, (vii) being conducted in schools in the



Turkish context, (viii) being quantitative and relational studies, (xi) clearly describing elements such as sample, method and measurement tools and providing statistically necessary information accurately. In this sense, the selection was limited to studies found in databases that are accepted as reputable in science and published in refereed journals. Besides, the time frame was set as between 2000-2017 because the empirical studies on teachers' job satisfaction became widespread in the national literature during this period.

A total of 206 studies were retrieved by searching the key word “*teachers' job satisfaction*” in the databases including Web of Science, ERIC, SCOPUS and ULAKBİM. Then, 161 studies that did not predict job satisfaction were excluded from the evaluation, and 18 recurring studies were also eliminated. Lastly, the remaining 27 studies were analysed in detail. An evaluation form was developed in accordance with the criteria for the selection of studies. The studies were retrieved by the researchers as they used this form. The full-text studies were coded as S1, S2, S3,...S27, and stored in the computer environment. The authors, topics, methods and findings of the studies were divided into categories by using Microsoft Office Excel.

The quality of the 27 articles were evaluated based on EPPI-Centre (2018), and the framework for assessing the weight of evidence proposed by Gough, Oliver and Thomas (2017). Evaluating the methodological quality, methodological relevance and topic relevance of studies as a whole demonstrates the weight of evidence. In this regard, the design of the studies can make them stronger in terms of evidence. Besides, the methodology and the topic of the articles being relevant also contribute to this aspect. Both researchers of the present study prepared a quality check-list and evaluated the studies by rating them from 1 to 4 based on quality. In case of a disagreement, the opinion of an expert was obtained. The studies that did not meet the necessary criteria in the quality check-list were excluded from the analysis. For example, the studies whose methodologies were not written well, and reliability and validity values were not provided were excluded.

In this step, the studies were summarised and the themes were formed in accordance with the research aims. The summaries under each theme were read and evaluated to reach primary themes. The studies were read and evaluated independently by the two researchers. Lastly, the studies evaluated by the researchers were combined in a single form. The studies included in the analysis are presented in Table 1.

Table 1. Findings regarding the studies examined

No.	Researchers	Number of participants	Findings
1	Türkoğlu, Cansoy & Parlar (2017)	Quantitative n=489	The self-efficacy belief for ensuring student participation is related to teachers' job satisfaction ($r=.22, p < .05$) and predicts teachers' job satisfaction ($\beta=.30$).
2	Çevik (2017)	Quantitative n=358	Teachers' well-being, valuing their lives and life satisfaction that refers to evaluating life positively are related to their job satisfaction ($r=.56, p < .05$), and life satisfaction predicts job satisfaction ($R^2=.31, p < .05$). Teacher self-efficacy and job satisfaction are related ($r=.33, p < .05$) and self-efficacy predicts job satisfaction ($R^2=.34$). Self-respect that refers to individuals' accepting themselves as a whole is related to job satisfaction ($r=.36, p < .05$) and self-respect predicts teachers' job satisfaction ($R^2=.35, p < .05$).
3	Okçu & Çetin (2017)	Quantitative n=830	Intimidation towards the job is related to job satisfaction ($r=-.38$), and intimidation towards relationships is also related to job satisfaction ($r=-.31$). Intimidating behaviours are negatively predict and explain job satisfaction ($R^2=.28$).
4	Güngör (2017)	Quantitative n=319	Ethical leadership behaviours that indicate school principals' exhibiting ethical behaviours, being honest and trustworthy and keeping their promises are positively and significantly related to job satisfaction ($r=.44, p < .05$), and ethical leadership behaviours predict teachers' job satisfaction ($\beta=.30$).
5	Taş (2017)	Quantitative (n=121)	School principals' individual-oriented leadership behaviours that emphasise teachers' interests and needs are related to teachers' job satisfaction ($r=.73, p < .05$). School principals' individual-oriented leadership behaviours predict teachers' job satisfaction ($\beta=.51$).
6	Uzun & Özdem (2017)	Quantitative n=250	Administrative support towards appreciating teachers, exhibiting positive behaviours and helping employees is related to job satisfaction ($r=.45, p < .05$) and perceived administrator support predicts job satisfaction ($\beta=.41$).
7	Sesen, Tabak & Arlı (2016)	Quantitative, n=208	Teachers' self-observation behaviours, which refers following and being aware of how well one does his/her job, is related to job satisfaction ($r=.34, p < .05$). Concentrating on thinking about natural rewards, which refers to behaviours that individuals like, is related to job satisfaction ($r=.22, p < .05$). Self-observation predicts job satisfaction ($\beta=.22$). Concentrating on thinking about natural rewards is a positive and significant predictor of job satisfaction ($\beta=.11$).
8	Tabancı (2016)	Quantitative Relational n=369	Teachers' loneliness in social relationships that indicate the environments where they have rare or no social relationships is related to intrinsic job satisfaction ($r=-.26, p < .05$) and loneliness in social relationships is a predictor of intrinsic job satisfaction ($\beta=-.25$). Loneliness in social relationships is related to extrinsic job satisfaction ($r=-.21, p < .05$) and is a predictor of extrinsic job satisfaction ($\beta=-.15$).
9	Tan (2016)	Quantitative (n=822)	Team leadership behaviours that highlight resolution, cooperation, motivation, strengthening the staff and effective communication predict teachers' job satisfaction ($\beta=.70, p < .05$).
10	Ordu (2016)	Quantitative n=370	The perception of managing differences at school that refers to school administrators' accepting the differences in the existence and values of employees and using these differences for the organisation is a predictor of job satisfaction. Managing the differences towards individual attitudes and behaviours are related to job satisfaction ($r=.48, p < .05$) and is a predictor of job satisfaction ($\beta=.19$). Managing the administrative practices and policies are related to job satisfaction ($r=.53, p < .05$) and predicts job satisfaction ($\beta=.34$).
11	Buluç Demir (2015)	Quantitative n=395	Teacher self-evaluation, a dimension of teacher self-efficacy, predicts teachers' job satisfaction ($\beta=.19$). Teachers' contribution to the improvement of schools predicts teachers' job satisfaction ($\beta=.29$). Teacher self-efficacy is a predictor of teachers' job satisfaction.

12	Demirtaş & Alanoğlu (2015)	Quantitative n=379	Teachers' participation in decisions at school predicts their job satisfaction ($R^2=.41$). Job satisfaction have a positive and significant relationship with participation in educational decisions ($r=.36, p < .05$) and participation to administrative decisions ($r=.34, p < .05$).
13	İlgaz, Parylo & Sungu (2015)	Quantitative n=600	School principals' instructional supervision behaviours that feature improving instruction and teachers, and guiding them by visiting classrooms predict different dimensions of teachers' job satisfaction. Instructional supervision behaviours are related to teachers' administrative satisfaction ($r=.65, p < .05$) and explain administrative satisfaction ($R^2=.42$). Instructional supervision behaviours are related to the satisfaction related to working life ($r=.42, p < .05$) and explain the satisfaction related to working life ($R^2=.18$), Instructional supervision behaviours are related to, and explain, self-improvement and safety in terms of economic issues ($r=.35, p < .05$), ($R^2=.12$). Instructional supervision behaviours predict job satisfaction as a whole.
14	Büyükgoze-Kavas, Duffy, Güneri & Autin (2014)	Quantitative n=500	Teachers' positive feelings that express their pleasure from life is related to job satisfaction ($r=.49, p < .05$), and teachers' positive feelings predict job satisfaction ($\beta=.33$). Teachers' job satisfaction is related to their levels of accomplishing their goals at the work place ($r=.44, p < .05$), and these levels predict job satisfaction ($\beta=.25$). Teachers' job satisfaction is related to perceived organisational support ($r=.36, p < .05$), and perceived organisational support predicts job satisfaction ($\beta=.18$).
15	Büyükgoze-Kavas, Duffy, Güneri & Autin (2014)	Quantitative n=500	Teachers' job satisfaction is related to perceived organisational support ($r=.36, p < .05$), and job satisfaction is predicted ($\beta=.18$).
16	Cerit (2014)	Quantitative n=304	Organisational collectivism that emphasises thinking about others in the organisation, being helpful and collaboration is related to teachers' job satisfaction ($r=.73, p < .05$) and the perception of organisational collectivism among teachers positively predicts their job satisfaction ($\beta=.69$).
17	Elma (2013)	Quantitative n=686	Operational justice that refers to the fair distribution of organisational resources is related to job satisfaction ($r=.63, p < .05$), and it predicts teachers' job satisfaction ($\beta=.34$). Interactional justice that refers to employees' respect and trust to each other is related to job satisfaction ($r=.64, p < .05$), and it also predicts job satisfaction ($\beta=.29$).
18	Karakuş & Çankaya (2012)	Quantitative n=237	Communication social relationships, reputation damage and psychological violence that teachers are exposed to are related to job satisfaction ($r=-.28, p < .05$) and psychological violence is a negative predictor of job satisfaction ($\beta=-.23$). Teachers' burnout is related to their job satisfaction ($r=-.34, p < .05$) and burnout negatively predicts job satisfaction ($\beta=-.28$).
19	Gümüş, Hamarat, Çolak & Duran (2012)	Quantitative n=238	Organisational identification that highlights individuals' feeling of belonging to the organisation they work in predicts teachers' job satisfaction. Identification with school ($r=.37, p < .05$) and professional identification ($r=.30, p < .05$) are related to job satisfaction.
20	Yılmaz & Altınkurt (2012)	Quantitative (n=249)	School administrators' use of rewards significantly and positively predicts teachers job satisfaction ($\beta=.29$).

21	Bektaş & Öçal (2012)	Quantitative n=291	School principals' behaviours of encouraging collaboration among teachers (i.e. leadership encouraging collaboration) are a positive and significant predictor of teachers' job satisfaction ($\beta = .21, p < .05$). Collaboration-based leadership is positively and significantly related to job satisfaction ($r = .21, p < .05$).
22	Savaş (2012)	Quantitative n=997	School administrators' emotional intelligence that refers to their being aware of themselves, and understanding their own feelings as well as others is a predictor of teachers' job satisfaction ($\beta = .11$). Emotional labour that refers to managing employees' feelings and expressions to fulfil the emotional requirements of a job is a positive and significant predictor of teachers ($\beta = .09$).
23	Koç, Yazıcıoğlu & Hatipoğlu (2009)	Quantitative n=432	Teachers' perceived achievement of goals and their performance levels towards achieving set targets are related to job satisfaction ($r = .46, p < .05$) and perceived performance levels predict teachers' job satisfaction ($R^2 = .21$).
24	Yılmaz & İzgar (2009)	Quantitative (n=298)	The environment of organisational creativity that features supporting different ideas and individual efforts at school, and the climate towards acting uniquely and producing new things predicts' teachers' job satisfaction ($R^2 = .46$).
25	Cerit (2009)	Quantitative (n=595)	Servant leadership behaviours that highlight school administrators' valuing their employees, guiding and improving them, meeting their needs and exhibiting sharing behaviours are related to teachers' job satisfaction ($r = .66, p < .05$) and administrators' servant leadership behaviours predict teachers' job satisfaction ($\beta = .76$).
26	Mamatoğlu (2008)	Quantitative n=194	One's identification with other teachers, an organisational identification subdimension, is related to teachers' job satisfaction ($r = .28, p < .05$) and predicts job satisfaction ($\beta = .29$).
27	Korkmaz (2007)	Quantitative n=630	School administrators' transformational leadership behaviours towards support, guiding teachers in an inspiring way, motivation and setting common goals are related to job satisfaction ($r = .58, p < .05$) and transformational behaviours predict teachers' job satisfaction ($\beta = .56$).

3. Findings

In the studies, three themes were revealed which significantly predicted teachers' job satisfaction. These themes are as follows: *School administrators' administrative behaviours, individual variables and organisational variables*. In this section, these primary variables that predict job satisfaction were discussed by synthesising different research findings.

3.1. School principals' administrative behaviours

School principals' administrative behaviours were found to be a predictor of teachers' job satisfaction (see Table 2).

Table 2. Relationships between administrators' behaviours and teachers' job satisfaction

Main theme	Sub-themes	Predictive characteristics	Studies Examined	Prediction of job satisfaction
School principals' administrative behaviours	Creating a collaborative environment and team spirit at school	Transformational leadership	Korkmaz (2007)	+
		Servant leadership	Cerit (2009)	+
		Valuing teachers	Taş (2017)	+
		Team leadership	Tan (2006)	+
		Culture of collaboration	Bektaş & Öçal (2012)	+
	Forming a trust-based school culture	Ethical leadership	Güngör (2017)	+
		Being fair	Elma (2013)	+
	Being in constant communication and interaction with teachers	Being helpful	Uzun & Özdem (2017)	+
		Providing positive professional feedback	Ilgan, Parylo & Sungu (2015)	+
	Supporting and tolerating employees	Respecting differences	Ordu (2016)	+
Exhibiting emotional intelligence behaviours		Savaş (2012)	+	

These themes are: (i) creating a collaborative environment and team spirit at school, (ii) forming a trust-based school culture, (iii) being in communication/interaction with teachers, and (vi) supporting and tolerating employees.

Creating a collaborative environment and team spirit at school:

As is seen in Table 2, there are common findings regarding school principals' behaviours predicting teachers' job satisfaction (Bektaş & Öçal, 2012; Cerit, 2009; Güngör, 2016; Korkmaz, 2007; Tan, 2006; Taş, 2017). Korkmaz (2007) found that school principals' transformational leadership behaviours positively predicted teachers' job satisfaction. Administrators' behaviours that inspire, motivate and promote common goals were related to, and predicted, teachers' job satisfaction. In another study, Cerit (2009) demonstrated that school principals' servant leadership behaviours positively predicted teachers' job satisfaction. School principals' valuing their employees, motivating, guiding and improving them, meeting their individual needs and sharing are characteristics of servant leadership. In a similar study, Taş (2017) showed that teachers' job satisfaction was positively predicted by school principals' caring and honourable behaviours. In another study, Tan (2012) found that team leadership behaviours towards resolution, collaboration, motivation and strengthening the staff positively predicted teachers' job satisfaction. Similarly, Bektaş and Öçal (2012) reported that teachers' job satisfaction was positively predicted by the leadership behaviours that encourage collaboration among teachers at school. Likewise, Güngör (2017) demonstrated that school principals' ethical leadership behaviours that feature consistency, integration and trustworthiness positively predicted teachers' job satisfaction.

Forming a trust-based school culture:

On the other hand, Elma (2013) found that the fair distribution of school resources was a positive predictor of teachers' job satisfaction. Uzun and Özdem (2017) reported that teachers' job satisfaction was predicted by school principals' behaviours of helping and appreciating teachers.

Being in communication/interaction with teachers:

Consistently, Ilgan, Parylo and Sungu (2015) observed that administrative satisfaction and satisfaction related to work life were positively predicted when school principals provided feedback towards improving instruction and teachers. Besides, Ordu (2016) showed that school principals' different thinking dispositions and being careful about these differences in practice positively predicted teachers' job satisfaction.

Supporting and tolerating employees:

On the other hand, Savaş (2012) discovered that school principals' emotional intelligence and emotional labour behaviours towards understanding teachers were important variables in predicting their job satisfaction.

Based on these findings, it can be stated that school principals' behaviours of being tolerant and managing differences at school, being fair and supporting teachers positively predict teachers' job satisfaction.

3.2. Individual variables

Certain variables the positively predicted teachers' job satisfaction were reported (see Table 3).

Table 3. Relationships between individual variables and teachers' job satisfaction

Main theme	Sub-themes	Predictive characteristics	Studies Examined	Prediction of job satisfaction
Individual variables	Teachers' positive perceptions of professional competence/efficacy	Teachers' self-evaluation	Buluç & Demir (2015)	+
		Teacher self-efficacy	Çevik (2017)	+
		Teacher self-efficacy (Ensuring student participation)	Türkoğlu, Cansoy & Parlar (2017)	+
		Teachers' efficacy perceptions for reaching goals	Yazıcıoğlu & Hatipoğlu (2009)	+
		Efficacy perceptions of reaching goals	Büyükgoze-Kavas, Duffy, Güneri & Autin (2014)	+
	Being psychologically healthy	Self-efficacy perceptions of doing quality work	Sesen, Tabak & Arli (2016)	+
		Self-respect and job satisfaction	Çevik (2017)	+
		Life satisfaction	Büyükgoze-Kavas, Duffy, Güneri & Autin (2014)	+
		Teachers' autonomous and unique behaviours	Sesen, Tabak & Arli (2016)	+

These themes are: (i) teachers' positive perceptions of professional competence/efficacy, and (ii) their being psychologically healthy. These characteristics can be said to be potential individual variables for enhancing job satisfaction.

Teachers' positive perceptions of professional competence/efficacy:

Teachers' perceptions of professional competence, well-being and life satisfaction predicted their job satisfaction (Buluç & Demir, 2015; Büyükgoze-Kavas, Duffy, Güneri & Autin 2014; Çevik, 2017; Koç, Yazıcıoğlu & Hatipoğlu, 2009; Sesen, Tabak & Arli, 2016; Türkoğlu, Cansoy & Parlar, 2017). Buluç and Demir (2015) found that teachers' self-evaluation was a positive predictor of their job satisfaction. In a similar study, Çevik (2017) indicated that teacher self-efficacy perceptions predicted job satisfaction, while Türkoğlu, Cansoy and Parlar (2017) demonstrated that teachers' self-efficacy perception regarding student participation was a strong predictor of their job satisfaction. In a way that supports these findings, Koç, Yazıcıoğlu and Hatipoğlu (2009) showed that teachers' job satisfaction was positively

predicted by their perceptions of competence for achieving educational goals. Similarly, Büyükgoze-Kavas, Duffy, Güneri and Autin (2014) found that teachers' perceptions of competence for achieving educational goals positively predicted job satisfaction, and Sesen, Tabak and Arlı (2016) demonstrated that teachers' behaviours related to job quality and their monitoring of themselves related to the job positively predicted their job satisfaction.

Teachers' being psychologically healthy:

Teachers' positive psychological perceptions are important for job satisfaction. Çevik (2017) showed that self-respect that refers to individuals' forming their own identity and valuing themselves, and life satisfaction that refers to positive life perceptions positively predicted teachers' job satisfaction. Likewise, Büyükgoze-Kavas, Duffy, Güneri and Autin (2014) reported that teachers' positive feelings of pleasure from life positively predicted teachers' job satisfaction. Besides, Sesen, Tabak and Arlı (2016) found that teachers' job satisfaction was positively predicted by individuals' performing autonomous and unique behaviours related to their job.

3.3. Organisational variables

Some variables at the organisational level were found to positively predict teachers' job satisfaction.

Table 4. *Relationships between organisational variables and teachers' job satisfaction*

Main theme	Sub-themes	Predictive characteristics	Studies Examined	Prediction of job satisfaction
Organisational variables	Perceived Support, respect to ideas and values	Participation to decisions	Demirtaş & Alanoğlu (2015)	+
		Forming a creative environment	Yılmaz & Izgar (2009)	+
		Solidarity and support, strong social relationships	Cerit (2014); Tabancalı (2016)	+
	Caring about ideas and individual values,	Valuing employees, organisational identification	Büyükgoze-Kavas, Duffy, Güneri & Autin (2014)	+
		Organisational identification	Gümüş, Hamarat, Çolak & Duran (2012)	+
		Identification with teachers	Mamatoğlu (2008)	+
	Psychological mobbing	Negative interpersonal relationships	Karakuş & Çankaya (2012); Okçu & Çetin (2017); Tabancalı (2016)	-
		Destruction in feelings	Karakuş & Çankaya (2012)	-

These themes are: (i) perceived support, respect to ideas and values, (ii) caring about ideas and individual values, (iii) psychological mobbing.

Certain variables were reported which positively (Büyükgoze-Kavas, Duffy, Güneri & Autin, 2014; Cerit, 2014; Gümüş, Hamarat, Çolak & Duran, 2012; Demirtaş & Alanoğlu, 2015; Mamatoğlu, 2008; Yılmaz & Izgar, 2009), or negatively predicted teachers' job satisfaction (Karakuş & Çankaya, 2012; Okçu & Çetin, 2017; Tabancalı, 2016).

Perceived support, respect to ideas and values:

Demirtaş and Alanoğlu (2015) demonstrated that teachers' participation to instructional and administrative decisions at school positively predicted their job satisfaction. Similarly, Yılmaz and Izgar (2009) showed that teachers' job satisfaction was positively predicted by organisational creativity environment that highlighted the climate towards different ideas, supporting individual efforts, acting uniquely and being innovative. Besides, they also found that teachers' job satisfaction increased with the administrative support perceived by them. Cerit (2014) reported that the perception of collectivism that encourage solidarity and support positively predicted job satisfaction.

Caring about ideas and individual values:

Büyükgoze-Kavas, Duffy, Güneri and Autin (2014) determined that teachers' job satisfaction was positively predicted by their having a workplace environment in which they are valued. Furthermore, they also revealed that the integration with organisational values positively predicted job satisfaction. Gümüş, Hamarat, Çolak and Duran (2012) reported that identification with school and professional identification positively predicted job satisfaction, and Mamatoğlu (2008) also showed that identification with other teachers positively predicted satisfaction.

Psychological mobbing:

Various organisational characteristics negatively predicted job satisfaction. Karakuş and Çankaya (2012) reported that the psychological violence teachers are exposed to negatively predicted their job satisfaction. Likewise, Okçu and Çetin (2017) observed that intimidation towards the job and intimidation towards relationships negatively predicted job satisfaction. On the other hand, Tabancalı (2016) indicated that loneliness negative predicted intrinsic and extrinsic job satisfaction in environments where teachers' social relationships at a low level. Lastly, Karakuş and Çankaya (2012) found that as teachers' have increased feelings of incompetence, failure and insensitivity in their profession, their burnout negatively predicted their job satisfaction.

4. Results and discussion

In this study, 27 empirical studies on teachers' job satisfaction were examined. In these empirical studies, there were three factors that predicted job satisfaction. These were school administrators' administrative behaviours, individual variables and organisational variables. When the three factors are evaluated together, it can be stated that personal relationships at school and teachers' individual competence perceptions and being psychologically healthy were important in ensuring their job satisfaction.

Certain characteristics contributed to teachers' job satisfaction. These characteristics were ensuring collaboration and creating team spirit at school, culture of trust, and school principals' sustaining communication and interaction with teachers. On the other hand, social support, psychological support or meeting different needs, and strong emphatic relationships were decisive in ensuring job satisfaction. Besides, teachers' professional self-efficacy beliefs, positive attitudes towards life and being psychologically healthy were individual variables that

explained job satisfaction. In parallel to the findings in this study, Utriainen and Kyngas (2009) formed three themes including interpersonal relationships, patient care and organising nursing tasks in their study in which they compiled articles on nursery. The theme 'interpersonal relationships' consisted of sub-themes such as the feeling of synergy, interaction and communication, team work, organisational climate and peer support. The theme 'patient care' contained sub-themes including the importance of patient care, opportunities for quality patient care and good relationships with patients. Lastly, the theme 'organising nursing duties' was formed with sub-themes such as work-family relations, supportive leadership, workplace, appropriate workload, salary and benefits, autonomy, professionalism and professional development.

In accordance with the research findings, Lu, While and Barriball (2005) found in their review of studies related to nurses' job satisfaction that work stress rather than working conditions affected job satisfaction. Moreover, they reported that nurses' work load increased their work stress, which weakened job commitment and relationships. Taylor and Tashakkori (1995) determined school culture and participation to decision-making processes as antecedents of job satisfaction. Crossman and Harris (2006) stated that the environmental factors forming job characteristics and workplace environment affected job satisfaction. In a similar vein, Brief and Weiss (2002) indicated that when individuals have more intense relationships with their environment, they exhibit positive personality characteristics, and when they work in supportive environments, they have higher job satisfaction.

In studies on job satisfaction, it is emphasized that the concept is composed of intrinsic and extrinsic factors. Intrinsic factors cover elements such as personality, education, talent, age and marital status, while extrinsic factors include those such as wage, promotion opportunities, colleagues and supervision (Spector, 1997). According to Hackman and Oldham (1976), the variety of tasks in the organisation, the identity and importance of positions, autonomy for employees and feedback facilitate job satisfaction. Spector (1997) asserted that the variety of skills and tasks, importance of tasks, job autonomy and feedback towards the job were among the determinants of job satisfaction. Luthans (2010) said that the primary determinants of job satisfaction were the job, wage, promotion, supervision and colleagues. Tella, Ayeni and Popoola (2007) pointed out that job characteristics, interests, status, security and promotion opportunities affected job satisfaction. For Kreitner and Kinicki (1998), meeting individual needs, disagreements, values gained, equality and quality were among the decisive characteristics behind job satisfaction.

As can be inferred from the a fore mentioned statements, the elements that ensure job satisfaction mostly include job characteristics, success, recognition, working conditions and interpersonal relationships according to the findings in this study. These results are consistent with Herzberg's (1959) dual-factor motivation theory. On the other hand, job satisfaction can be said to develop depending on school-based factors and teachers' intrinsic rewards. Skaalvik and Skaalvik's (2011) study also support these results. They showed that strong relationships and a supportive environment at school were important in promoting job satisfaction.

According to the findings in this study, the following suggestions can be offered for practitioners: School administrators who want to enhance teachers' job satisfaction can be suggested to exhibit integrative and sincere behaviours and create a strong collaboration environment and support culture at school. Besides, administrators can support the improvement of teachers' professional self-efficacy beliefs. Furthermore, teachers' job satisfaction can be strengthened by supporting them psychologically when needed and forming a proper school culture. In this respect, school administrators can be suggested to create a strong school culture based on trust, justice and support as they care about communication, interaction

and helpfulness in their schools. Moreover, teachers should receive counselling services towards improving their individual psychological determinants. Policy-makers, on the other hand, can improve the working conditions and thus make school principals pay more attention to teachers. This is because school principals' being too busy with the bureaucratic routines or daily tasks can hinder the communication with teachers and forming a healthy working environment. As for further research, the studies examined in the present study are limited to a certain number of papers. The study can be replicated by including theses/dissertation and in the international literature. The studies that examined the effects of administrative behaviours, organisational variables and individual variables on job satisfaction mostly adopted quantitative survey and relational models. Therefore, descriptive qualitative studies and causal studies can be conducted to reveal the cause-effect relationship in-between. Additionally, the relationships between two variables were investigated in most relational studies on job satisfaction. In this regard, many other variables can be studied. Mediator and moderator variables can also be included in such studies.

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A REVIEW ON WRITING METACOGNITIVE AWARENESS OF TURKISH ADVANCED LEVEL EFL LEARNERS¹

Research Article

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A REVIEW ON WRITING METACOGNITIVE AWARENESS OF TURKISH ADVANCED LEVEL EFL LEARNERS

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Abstract

The present study was undertaken to measure the metacognitive writing awareness of university-level learners. The participants of the study are 101 students of English Language and Literature, enrolled at a state university in Turkey. The grade level of the students ranges from the first grade to the fourth grade. In order to collect data, a questionnaire, developed by Farahian (2017), was used. This questionnaire measures the awareness of metacognitive writing with regard to *knowledge of cognition* and *knowledge of regulation*. Knowledge of cognition is studied under the following sub-scales: (a) declarative knowledge (person), (b) declarative knowledge (task), and (c) procedural knowledge. Knowledge of regulation was studied in terms of (a) planning and drafting, (b) general online strategies (c) monitoring and revision. Descriptive statistics were used to analyse the data obtained and tentative results showed that students have a moderate level of writing awareness.

Keywords: writing metacognitive awareness, EFL students, writing skill

1. Introduction

The historical background of the term metacognition dates back to James, Piaget, and Vygotsky. However, the concept was only popularised from the 1970s onwards. One of the earliest definitions of metacognition is "the part of one's acquired world knowledge that has to do with cognitive (or perhaps better, psychological) matters" (Flavell, 1987). Metacognition can be viewed as cognition of cognition, or it can be viewed as knowing how to think. It has become an important research area in both cognitive and developmental psychology (Öz, 2005). Thus, the concept of metacognition has a remarkable influence on the learning process. Most people agree that the terms of cognition and metacognition differ from each other. Cognitive abilities are needed to fulfill an assignment and metacognition, is required in order to perceive how the task was fulfilled (Garner, 1987). Research has well established that students who are metacognitively aware can monitor their progress more effectively and exert control over their learning process.

It was after the emergence of the process-oriented approach in writing, that the term metacognition began to be regarded as highly significant (Farahian, 2017). There had been a movement towards a process-oriented approach of writing that, as Hairston (1982) has mentioned, resulted in a paradigm shift in writing a composition. Nowadays, writing is considered as the activity of coining meaning; the learner in writing processes is required to include activities that prepare, revise and check the draft (Majid, 2015). With the rise of process-oriented approaches, the roles of self-regulation and decision-making activities

became more important. In this new conceptualization, writing skills are thought to include creating meaning in the circular processes of drafting, revising, and checking.

Writing skills are studied extensively. Over the years, many researchers have focussed on analysing students' writing processes and strategies, for the purpose of providing solutions to problems pertaining to writing skills (Crossley, Kyle & McNamara, 2016; Ho & Usaha, 2011). Metacognitive knowledge was found to be among the most important factors that influence writing skills (Farahian, 2017). Metacognition enables students to be aware of the demands and structures of different kinds and types (Harris, et al., 2010). In addition, since metacognition provides students with better planning, monitoring, and evaluating skills, they can regulate their cognitive skills in the writing processes.

1.1. Metacognition

Concerning metacognition, a detailed review of research in educational psychology shows that the term 'metacognition' originated from human cognitive development research. Under the teaching term metacognitive, metacognition was included in cognitive psychology about thirty years ago (Goh, 2008). Metacognition reveals a person's awareness and regulation of cognition in performing an assignment (Baker & Brown, 1984; Crossley, Kyle & McNamara, 2016; Flavell, 1979). Many studies have been done in order to investigate the function and place of metacognition in English Language Teaching. In this respect, Wenden (1998) describes metacognition as a learning process which is a part of the acquisition of a student's knowledge and a system of related ideas. According to Birjandi et al., (2006), they are both a kind of cognition, and high-level thinking activity requires control over the cognitive processes in the mind. It is counted, as the *seventh sense* and it is also one of the mental abilities that very successful students use.

Students' performance in reading and listening was investigated in many studies, (Baker & Brown, 1984; Schneider & Pressley, 1997; Kragler & Martin 2009; Zheng, 2018). On the other hand, not much research has been done to investigate the place of metacognitive knowledge in the performance of English learners (Devine, 1993; Reiff & Bawarshi, 2011; Scott & Levy, 2013).

Flavell (1979) argues that metacognitive knowledge is knowledge related to someone's own cognitive activities and output, such as learning-relevant properties of input. Some other scholars have also tried to describe the characteristics of good language students and the strategies they use in language assignments. Mahmoudi et al., (2010) says it was noticed that metacognitive knowledge about the features of any assignment and the use of appropriate methods in order to find a remedy to the problem, is the main cornerstone of language learning activities. So, metacognitive strategies allow students to play a dominant role in language learning activities and manage learning activities positively to find the best way/s to practice the processes of learning (Chari et al., 2010). In addition to this, metacognition includes two components; the first one is metacognitive knowledge and the second is metacognitive control. Metacognitive knowledge is located in long-term memory. As for metacognitive control, this functions in the learners' working memory, for using metacognitive knowledge in order to reach targets by means of different cognitive activities such as making sense, taking decisions, and monitoring (Batha & Carroll, 2007; Roebers, & Feurer, 2016). Paris and Winograd (1990), say that metacognition can make a great contribution to academic learning and motivation. To this end, metacognition comprises of skills in knowledge and regulation which are utilised to control learners' cognition. Metacognition can help individuals grasp a wide range of aims.

1.2. Metacognitive awareness in writing

It was observed that learners who lacked ability in a language level may not function well either in language classroom activities or in other academic fields (Küçükler, 2018). It can be inferred from this that proficiency in a language level enables learners to be proficient in other majors too. At university, for the students who study in English Language departments, good writing skills carry higher importance when compared with students of other departments. It can be stated that some factors influence writing skills and abilities.

In the research of writing activity strategies, scholars have tried to demonstrate effective writing activities, for example in 1981, Flower and Hayes presented the Cognitive Processes of Writing. Subsequently, there has been a move from written materials to some of the ways that learners compose written work with the help of cognitive activities and the manner in which they reflect their ideas and thoughts onto a piece of paper (Dyson, 1990; McGee & Richgels, 2000). Hayes (2000), Zimmermann (2000) looked again through cognitive processes in foreign language writing. Since the time when writing began to be viewed as a process rather than merely a product, close attention has been given to the role of writing strategies in improving L2/EFL writing abilities in the field of second language education (Byrnes and Manchón 2014; Cohen 2011; Cumming 2001; Grabe and Kaplan 1996; Hinkel 2011; Hyland 2015).

Metacognitive awareness is considered an important factor that distinguishes low-level writers from high-level writers (Wei, Shang & Briody, 2012). Most studies found a positive link between writing proficiency and metacognitive awareness (Yanyan, 2010; Gupta & Woldemariam, 2011). Some studies on English teaching and writing in this vein can be seen (as in Flavell, 2016; Schoonen et al., 2009; You & Joe, 1999), and they were among the few scholars to research the ties between writing and metacognitive knowledge. You & Joe (2001) investigated how talented writers use metacognitive techniques through introspective interviews. In the research, You & Joe touched upon five types of declarative and procedural knowledge.

Researchers examined the meta-awareness of students when they were between writing assignments and texts. Rounsaville, Goldberg, & Bawarshi (2008) noted that metacognitive knowledge is able to make learners “reorient their relationship to what they knew,” and they prepared a learner survey to denote the demands of writing processes. That said, to improve students’ writing ability, the researchers highlighted the requirement in order to improve learners’ awareness of metacognitive knowledge. Learners should be aware of their writing aims and activities and they should know how to regulate their cognitive objectives to become proficient writers (Kasper, 1997; Schraw, 2001). The investigations underline the need to have a relevant instructional technique that would improve students’ metacognitive perception and make them intelligent writers in English (Xinghua, 2010). Graham and Harris (2009) also hold the idea that teachers need to know the approaches that include learners in writing activities and enable them to work with each other to learn such abilities as planning and revising.

So, in this vein, with regard to the importance of the topic, we decided to define the awareness of metacognition of students in writing. In this respect, the present study aims to answer the following research questions:

- 1) What are the opinions of the students in the English Language Department toward metacognitive writing knowledge?
- 2) What is the awareness level of the students in the English Language Department toward metacognitive writing knowledge?

2. Methodology

2.1. Research design

The study comprises quantitative research, for which a survey model was used. A survey model is a research approach that describes a past or present state of affairs. The survey in the research has quantitative characteristics, and that said, a cross-sectional survey design was used in order to get the relevant feedback. The reason for using the cross-sectional design was to be able to measure ideas perceptions and attitudes over a period of time (Liu, 2011; Steedle, 2012). In addition to this, the survey model was also made use of, in order to find whether there is a connection among variables of two or more (Büyüköztürk et al., 2009; Kaptan, 1998; Karasar, 1995; Tabachnick et al., 2013). The survey related to the metacognitive awareness of the students consisted of thirty-six items applied to the education in the Language and Literature Department of a state university received by the students, and the results were evaluated.

2.2. Instrumentation

As learners had relevant devices, an online survey was prepared to obtain the required data to answer the research. In order to collect the data, a questionnaire developed by Farahian (2017) was used. It comprised of thirty-six closed-ended statements designed on a 5-point Likert scale. The elements of the questionnaire were devised in order to understand the level of Metacognitive Awareness of Turkish Advanced Level Learners in Writing.

The questionnaire in the survey included both Flavel's (1979) and the two-dimensional dilemma of knowledge and regulation of cognition. The survey was open for two weeks. As soon as the time was up for responding to the questionnaire, the collected data was entered into a Statistical Package for Social Sciences (SPSS.17.0). For analyses, means, percentages, frequencies and standard deviations were calculated. The T-test was used for the comparison of mean agreement levels of two different genders, independent samples, and for the comparison of mean agreement levels of four different grades, ANOVA (Analysis of Variance) was used.

2.3. Setting and participants

The subjects consisted of 101 students (75 females and 26 males), which is approximately 75% of the students were female and 25% of the participants were male. The participants of the study were students of English Language and Literature, enrolled at a state university in Turkey. The so-called department had 780 enrolled students in total. There were daytime education (I) and evening education programs (II). The grade level of the students ranged from the first grade to the fourth grade, and they studied in both programs I and II. The study was conducted in September, Fall term of 2018-2019 education year. The students gave consent for data collection and voluntarily completed an online survey by responding to the questionnaire. The age of the subjects was between 18 and 24 years old.

2.4. Measures

There are two sub-themes of the metacognition framework for metacognitive awareness in writing, knowledge of cognition and regulation of knowledge. This was adapted from Maftoon, Birjandi, and Farahian (2014). There are three sub-dimensions of Knowledge of Cognition; Declarative knowledge (person), Declarative knowledge (task knowledge) and Procedural knowledge, and there are three sub-dimensions of the Regulation of cognition; Planning and drafting, General online strategies and Monitoring revision. There is a total of thirty-six questions in the questionnaire. Evaluation of the scale was as follows: "I totally disagree (1), I disagree (2), I have no idea (3), I agree(4), I totally agree (5)".

Table 1. *The percentages of regarding knowledge of cognition and regulation of cognition*

	Sub-dimensions	No Idea	Agree	St. Agree
Knowledge of cognition	Declarative knowledge-person	11,3%	60,8%	27,9%
	Declarative knowledge-task knowledge	12,7%	64,0%	23,3%
	Procedural knowledge	19,7%	61,1%	19,2%
Regulation of cognition	Planning and drafting	19,0%	66,2%	14,8%
	General online strategies	16,6%	68,5%	14,9%
	Monitoring revision	20,1%	70,4%	9,5%

The percentages of agreement levels are calculated under six different sub-scales. For the Declarative knowledge-person sub-scale, 28% of interviewees “strongly agreed” with the statements, 61% of interviewees “agreed” with the statements and 11% of the interviewees had “no idea” about the statements.

For the Declarative knowledge-task knowledge sub-scale, 23% of interviewees “strongly agreed” with the statements, 64% of interviewees “agreed” with the statements, and 20% of interviewees had “no idea” about the statements. For the Procedural knowledge sub-scale, 19% of interviewees “strongly agreed” with the statements, 61% of interviewees “agreed” with the statements and 20% of interviewees had “no idea” about the statements. For the Planning and drafting sub-scale, 15% of interviewees “strongly agreed” with the statements, 66% of interviewees “agreed” with the statements and 19% of interviewers had “no idea” about the statements.

For the General online strategies sub-scale, 15% of interviewees “strongly agreed” with the statements, 69% of interviewees “agreed” with the statements, and 17% of interviewees had “no idea” about the statements. For the Monitoring revision sub-scale, 10% of interviewees “strongly agreed” with the statements, 70% of interviewees “agreed” with the statements and 20% of interviewees had “no idea” about the statements. None of the participants disagreed or strongly disagreed with the related statements.

Table 2. *The mean scores regarding knowledge of cognition and regulation of cognition*

Sub-dimensions	Mean	St. Dev.	Median	Min	Max
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Knowledge of cognition	Declarative knowledge-person	4,1662	0,3098	4,2000	3,60	4,80
	Declarative knowledge-task knowledge	4,1064	0,2639	4,1111	3,44	4,67
	Procedural knowledge	3,9944	0,3023	4,0000	3,20	4,80
Regulation of cognition	Planning and drafting	3,9577	0,2472	3,8750	3,25	4,75
	General online strategies	3,9831	0,3112	4,0000	3,00	4,80
	Monitoring revision	3,8944	0,3124	4,0000	3,00	4,50

For all of the six sub-scales, the level of mean agreement was approximately 4. When we compare the three sub-scales of the “Knowledge of cognition”, it can be said that the agreement level of “Procedural knowledge” is weaker than that of “Declarative knowledge”. Similarly, when we compare the three sub-scales of “Regulation of cognition”, it can be said that the agreement level of “Monitoring revision” is weaker than that of “Planning and drafting” and “General online strategies”.

Table 3. *T-test results regarding gender and sub-dimensions of writing cognition*

	Sub-dimensions	Female (n=75) Mean	Male (n=26) Mean	t	p value
Knowledge of cognition	Declarative knowledge-person	4,1547	4,2000	-0,533	0,596
	Declarative knowledge-task knowledge	4,1027	4,1173	-0,201	0,841
	Procedural knowledge	3,9925	4,0000	-0,091	0,928
Regulation of cognition	Planning and drafting	3,9434	4,0000	-0,837	0,405
	General online strategies	3,9849	3,9779	0,066	0,948
	Monitoring revision	3,9104	3,8472	0,739	0,463

Subject to the descriptive analysis results of the survey data, three-quarters of the participants were female (75%) and a quarter of participants were male (25%). For the comparison of mean agreement levels of the two different genders, an independent sample T-test was used. Subject to the results of independent sample T-test, there were no statistically significant differences between females and males in the point of mean agreement levels of six sub-scales ($p > 0,05$). For instance, the mean agreement level of the “Monitoring revision” sub-

scale was 3,9104 for females and 3,8473 for males. The mean difference of 0,0631 was statistically non-significant.

Table 4. ANOVA results regarding grade level and sub-dimensions of writing cognition

	Sub-dimensions	Grade 1 (n=43) Mean	Grade 2 (n=18) Mean	Grade 3 (n=17) Mean	Grade 4 (n=23) Mean	F	p value
Knowledge of cognition	Declarative knowledge-person	4,1628	4,1889	4,2000	4,1250	0,08 6	0,968
	Declarative knowledge-task knowledge	4,1034	4,1235	4,2778	4,0417	0,45 8	0,713
	Procedural knowledge	4,0233	4,0111	3,6000	3,9000	1,58 2	0,202
Regulation of cognition	Planning and drafting	3,9564	3,9792	3,8750	3,9375	0,13 3	0,940
	General online strategies	3,9721	4,0111	4,200	3,9250	0,47 2	0,703
	Monitoring revision	3,8953	3,9306	4,1250	3,7500	1,01 4	0,392

For the comparison of mean agreement levels of four different grades, ANOVA (Analysis of Variance) was used. Depending on the results of the F test, there were no statistically significant differences between the four grades (courses) at the point of mean agreement levels of the six sub-scales ($p > 0,05$).

3. Discussion

The percentages of agreement levels of the students were evaluated under were six different sub-scales: (1) declarative knowledge (person), (2) declarative knowledge (task and knowledge), (3) procedural knowledge, (4) planning and drafting, (5) general online strategies, and (6) monitoring revision. None of the participants disagreed or strongly disagreed with the related items.

For all of the six sub-scales, the level of mean agreement was approximately 4. When we compared the three sub-scales of “Knowledge of cognition”, it can be said that the agreement level of “Procedural knowledge” was weaker than that of “Declarative knowledge”. Similarly, when we compare the three sub-scales of “Regulation of cognition”, it can be said that the agreement level of “Monitoring revision” is weaker than that of “Planning and drafting” and “General online strategies”. Some precautions should be taken in order to improve the weaker aspects of the students.

According to the descriptive analysis results, at the end of the obtained data, three-quarters of the participants were female (75%) and a quarter of the participants were male (25%). The mean difference between male and female participants was 0,0631. That is, statistically, there are no remarkable differences between the two genders. For the comparison of mean agreement levels of four different courses (from the first course to the last course), ANOVA (Analysis of Variance) was used. Contingent to the results of the F test, there were no statistically significant differences between the four grades at the point of mean agreement levels of six sub-scales ($p > 0,05$). What can be inferred from this value is that there is no differences statistically among grades.

4. Conclusion

Writing requires specific integrative skills and is extremely important as a constructive and complex activity. It is a very essential skill that gives students an opportunity in preparing personal letters, essays, research papers, journals, and so on and requires a level of proficiency. Based on reviews of the research, they (Gagne, 1985; Wei et al., 2012; Farahian, 2015) suggest that it is metacognitive awareness that allows learners to obtain knowledge about the strategies they are using. The learners' ability to discuss the writing strategies they use may provide additional evidence of their metacognition. Therefore, in order to improve students' writing talents and abilities, the scientists underline developing students' awareness of metacognitive knowledge. Kasper (1997) maintains that students are required to be aware of writing objectives and activities and conceive of arranging and regulating their own cognitive objectives with regard to writing, in order to be talented writers.

Metacognition helps students with language acquisition, especially in the field of writing processes. It is vital for successful language learning as it allows learners to better manage cognitive skills. It is also very important for successful learning activities, especially in writing, as it gives an opportunity for learners to find their weaknesses which can then be improved by applying new strategies. It can be said that almost everyone is capable of metacognition, that is to say, thinking about how they fulfill a certain skill or ability. Almost everybody who is able to manage a skill in any subject is capable of metacognition, namely, thinking about how they are successful in that skill. In order to develop metacognition it is necessary to begin to construct an awareness among learners, however, metacognition differs from cognition to some extent and increases success on the whole. Although many studies have been carried out in order to investigate effective teaching-learning strategies in such skills as writing, reading, and speaking, not many studies have been conducted in order to conduct research about the place of metacognitive knowledge in the performance of English learners on writing at university level. The present study tries to shed light on the metacognition of effective writing.

There is a bulk of research indicating that working memory plays a crucial role in the management of metacognitive control; that is to say, if input or output is processed in an efficient manner the cognitive load of the working memory can be room can be spared for recalling metacognitive knowledge (Han, 2013; Han & Stevenson, 2008; Phakiti, 2007). Working memory can be facilitated through topic familiarity (Manchon et al. 2007). Through the use of familiar topics, better strategy use can also be ensured. Therefore, writing topics can be selected from students' everyday life experiences.

Regarding the role of writing within the context of World Englishes paradigm, Matsuda & Matsuda (2010) suggested the following guidelines:

- teach the dominant language forms and functions

- teach the boundary between what works and what does not
- teach the principles and strategies of discourse negotiation
- teach the risks involved in using deviational features

Therefore, future studies can focus on participant views on the use of World Englishes paradigm. In addition, more experimentation may be needed to measure the role of lexicogrammatical approach to writing.

Most of the studies conducted on metacognitive awareness are generally on reading skills of foreign language learners in Turkey. Nowadays although there have been some studies about the related issue by Öz (2016) and Farahian, (2015, 2017), these studies do not satisfy the expectations for Turkish context. In that sense, this article seems to fulfill an important gap in writing skills. To this end, as was aforementioned, the study found that in a Turkish state university, the remarkable weak areas of the Turkish student are found as "Procedural knowledge" and "Monitoring revision" sub-dimensions in writing.

On the other hand, it can be said that there are some limitations in this work. The study is limited as not many students participated in the survey, which was realised within a very short period of time. However, despite the limitations, various benefits can be inferred from this research. Accordingly, English language teaching instructors can help students increase their metacognitive awareness in writing classes in order to develop their writing processes. They ought to provide students with relevant opportunities to cooperate actively with the other students in the writing activities. To this end, this study can be considered as a contribution for further studies in metacognitive awareness in writing.

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A PRELIMINARY STUDY OF EFL READING ANDROID APPLICATION DEVELOPMENT

Research Article

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Abstract

The present study reports the results of an exploration stage of research and development (RND) whose project is to develop an EFL reading android application. At this exploration stage, this study aims at finding out the possible weaknesses of the existing EFL reading media (textbook) and the needs for an ideal EFL reading android application. 33 tenth grade senior high school students at one of the schools in central Java, Indonesia, were engaged as the participants. Both quantitative questionnaire and qualitative interview to 6 students were assigned to garner the data. This exploration revealed that some weaknesses of the textbook were comprised of monotonous colors, minimum portability, less automatic concept, limited materials, less readable instructions, limited exercises, less direct feedback of the exercises, and insufficient explanations related to EFL reading skill indicators. In turn, the needs analysis data indicated that an EFL reading android application was required to be developed. The developed product was expected to be simple and easily used, motivating and facilitating, up-to-date, providing various EFL reading activities, portable to be used inside and outside of the classroom, and controlling. The ongoing product in the form of the prototype is also presented at the end of this study report.

Keywords: android application; reading; English as a foreign language (EFL); media

1. Introduction

The twenty-first century is noted for the significant role that digital technologies play in many aspects of human's life worldwide (Sivachenko & Nedashkivska, 2017). The necessity to develop and integrate new, robust technologies dedicated to enhancing the learning and teaching quality is also mentioned in the digital agenda in advanced countries (Crăciun, 2015). Naturally, the people of today's generation including today's students also use digital technologies for networking, shopping, playing games, information searches, and other daily-life tasks or activities (Sivachenko & Nedashkivska, 2017). The presence of digital technology also ends up with the ease which helps them communicate with one another, advocate about some topics of concern, share their common interests, and give them the freedom to express their emotions and opinions (Alsuraihi, Almaqati, Abughanim, & Jastaniah, 2016). If the role of technology is anchored in the context of education, it seems considerably logical that teachers should use the maximum function of technology as the media of learning. Accordingly, students' interest to boost their skills in the learning process can be enhanced in such a way.

The advancement of technology *de facto* also naturally leads today's students to be very close to the growth of English language use. The daily utilization of technological and social media makes them faced with the necessity of appropriate English mastery since English is mostly the language of technological media operation. Hence, it makes sense that the use of English as an additional language has become a part of the natural need of today's students. Alongside *the status quo* of technological advancement, today's students are even called digital native (Grigoryan, 2018; Kress et al., 2001; Prensky, 2001). Something pivotal but implicit can be discerned from such condition whereby, in the context of English as a foreign language (EFL) pedagogy, today's students require the setting of learning that meets their nature as a digital native. In addition, to help reach the success of EFL learning *per se*, Richards (2015) suggests EFL teachers to provide students with two dimensions of learning that entail the learning process taking place inside the classroom and that carried out outside of the classroom. One of the meaningful ways to properly manage to help students experience the aforementioned two learning dimensions is by integrating the use of technology in EFL learning (Hazar, 2018; Hung, Shu-Shing, & Lim, 2006; Kaware & Sain, 2014; Spengler, 2015).

As regards the role of technology in EFL learning, it has gradually been scientifically and seriously addressed by a range of scholars. Some of them strive for studying the issue pertinent to mobile tools such as smartphones, iPads, and iPods as the possible and feasible media to promote the quality and success of EFL learning (Gangaiamaran & Pasupathi, 2017; Kukulka-Hulme, 2009; Zhang, 2016). Progressing scientific works in the realm of technology-based learning media really makes sense if viewed from the importance of such studies owing to the growing needs of today's students which cannot be entirely fulfilled by the old-fashioned learning media such as mere textbooks. Besides the effective use and substantive importance of textbooks (Munir, 2013), they are still considered insufficient to work alone in support of nowadays students' English mastery and needs. They need to be accompanied by the additional media which are technological in order to capably facilitate students to become the active and continuous learners, those who can maintain the act of EFL learning both inside and outside of classrooms. Hence, developing technology-based EFL learning media is of importance.

However, beyond the paramount importance of developing technology-based EFL learning media, a number of factors also lie to hinder the enactment of such media development. One of the major factors is that developing such media is difficult to be carried out. Most EFL teachers do not have adequate skill to do it due to the very technical sense of doing this. Thus, the efforts made by scholars having their major interest in technology and media development are really expected in order that EFL teachers have various alternative media sources to be utilized in the classroom. Furthermore, concerning with developing the technology-based learning media based on the needs and the opportunity of the current situation, it is also vitally important to take into account the availability of media products that can help teachers choose the most appropriate ones for their classes (Radić-Bojanić & Topalov, 2016). This point is true since although many guidelines available for the media of learning are suggested, the individual subjective judgments of the teachers are always central to making a decision whether to use them or not (Rahimpour & Hashemi, 2011).

Recently, there are a great number of EFL learning media whose products are in the form of smartphone applications available in the online application center such as *playstore*, *appstore*, and etc. They extend to not only the general ones like the applications for enhancing basic English skills but also the specific ones such as the applications assigned for improving TOEFL reading comprehension, or critical English reading skills. Notwithstanding, the particularities offered by such applications are set merely in the area of

a particular linguistic competence. There has not been found any online mobile application which offers its use for a specific EFL curriculum enacted in a certain country leading to the conceivability of utilizing it in the real EFL learning in the classroom as well as providing the capability of its use after the classroom learning process. This case lies to be a gap that triggers this study to focus its work on it specifically by making a research project to develop an EFL E-learning mobile application that does justice to the current Indonesian EFL curriculum.

This project initiates to circumscribe its work on the field of reading skill. The fundamental rationale beyond limiting this project extension to reading skill is because this skill becomes the most predominant in Indonesian EFL curriculum at schools. Reading skill frequently becomes the prioritized goal of learners living in the countries whose citizens use English as a foreign language (Hadi, 2006). This condition aligns with Indonesia which is incorporated into the expanding circle country inasmuch as the citizens use English as a foreign language as depicted by Kachru (1990) in his world Englishes model. Such focus of interest that this study brings to the realm of English reading skill makes a convincing case for the nature of English social function in Indonesia.

The overall project of this study is oriented towards developing an EFL reading android application. However, in this paper, what is offered to the readers is delimited on the preliminary study that this project carries out. This scope provides the results of the possible weakness of the currently used EFL reading media (textbook) and the need analysis for the EFL reading android application based on the students' views especially those engaged in EFL pedagogy at one of the schools in central Java, Indonesia. The results of this exploration are further functioned as the fundamental resources to develop the abovementioned EFL reading android application.

The school chosen as the place of this study is sufficiently ideal since mostly the students at this school are familiar with technological communicative tools like gadget and others. They use such tools daily for communication in social media, entertainment, games, and fulfilling their interest such as taking pictures, recording videos, and so on. Such present condition becomes a potential nature found amid the students, and this condition can positively support their success of EFL reading mastery. It is in line with Richards' (2015) notion in that the internet, technology, media, and the use of English in a face-to-face mode, as well as virtual social networks, provide greater opportunities for meaningful and authentic language use than that are available in the classroom.

The existing condition associated with the use of technological media amongst students at the school involved as the place of this study promotes the convenience for this study to be undertaken. Therefore, to report the data of the preliminary study, this paper addresses the following formulated research question:

1. What are the possible weaknesses of the existing EFL reading media (textbook) and needs for the EFL reading android application viewed by the students at one of the senior high schools in central Java, Indonesia?

Further, once the data which answer the formulated research question have been reported, this paper also displays the recent progressive work in the form of the prototype of EFL reading android application.

2. Research methodology

The present paper was a preliminary study of research and development project. In this part, a mixed qualitative and quantitative method was used to reveal the possible weaknesses

of the existing EFL reading media (textbook) and the need analysis data required to develop the EFL reading android application. The concurrent embedded model of the mixed method was employed in this study since the research question was answered by both qualitative and quantitative data.

2.1. Participants

The participants engaged in this study were 33 tenth grade students at one of the senior high schools in central Java, Indonesia. There were several classes having the same grade and level, but this study was delimited to involve the students from one class as the representative of those from other classes. The selection of that class was undertaken by assigning a random sampling technique. Especially for those, the six students taken from 33 ones, who were engaged to be interviewed, they were chosen purposively.

2.2. Techniques of data collection

The data in this research were garnered by utilizing the following data collection techniques.

2.2.1. Interview

The interview was carried out to 6 participants (students) in order to recognize the weaknesses of the existing EFL reading media (textbook) and to reveal the needs for the ideal EFL reading android application on the basis of the students' perspective. The researchers optimized the interview guideline for help. The result of the interview offered the qualitative data required by this study.

2.2.2. Questionnaire

The structured questionnaire was assigned to find out the required quantitative data of this study. 37 items which had previously been examined for their validity and reliability were assigned in the questionnaire. Every single item of questionnaire negotiated the possible weaknesses of the existing EFL reading media (textbook) and the needs for the EFL reading android application. The questionnaire was distributed to the 33 students from the selected class. They were asked to confirm the given items on the basis of the real situation they experienced. A checklist format was adopted in the questionnaire. Hence, the informants could simply give a tick for the best option presented under each item offered in the questionnaire based on their stance.

2.3. Techniques of data analysis

The qualitative data of this study were analyzed by using an interactive model as proposed by Miles, Huberman, and Saldana (2014). Four phases comprised of data collection, data condensation, data display, and conclusion drawing were executed. With respect to those phases, after the data of this study were collected from the interview, the entire data were condensed by finding out a range of meaningful themes to be coded along with grouping the data based on convenient themes. Here, the data which were not oriented to the appropriate themes were reduced to avoid bias. In turn, as regards the data display, the data which had been ideally grouped on the basis of their themes were critically selected to be displayed. The display was made by presenting a graph, table, or interview transcripts. Especially for interview transcripts, those selected to be displayed were ones that represented others based on the core of the addressed notions. The displayed data were further followed by some elaborations to provide data interpretation and discussion. The last phase went to conclusion drawing which was made by concisely summarizing all of the findings alongside their interpretation and discussion.

For the quantitative data, they were analyzed by calculating the percentage of every negotiated item confirmed by the respondents. The calculation relied on the following formula:

$$P = \frac{\sum Xi}{\sum X}$$

Note:

P	= Assessment
$\sum Xi$	= total answer of the respondents
$\sum X$	= the sum of the highest answer

2.4. Trustworthiness

In this study, the trustworthiness of the qualitative data was reached by pursuing the data credibility, transferability, dependability, and confirmability. The data credibility was pursued by applying a couple of strategies such as prolonged engagement at the field, peer debriefing, doing triangulation that covered theoretical, source, and method triangulation, collecting and interpreting all raw data, and doing member checks. Concerning with the data transferability, it was reached by doing purposive sampling technique and giving an adequate thick description in the report pertinent to each step this study took. In relation to the data dependability, it was afforded by utilizing more than one technique of data collection and establishing an audit trail. In turn, for the data confirmability, it was pursued by doing triangulation, conducting reflexivity practice, and preparing the audit trail of confirmability.

Appertaining to the quantitative aspect of this study, the trustworthiness was oriented to preparing a valid and reliable instrument. The quantitative instrument assigned in this study was a structured questionnaire. To reach the validity, the questionnaire was examined by some related experts and by doing the statistical calculation. Along with the statistical calculation of the validity, that of the reliability was also undertaken. Once the instrument (questionnaire) had been valid and reliable, it was further used to garner the focused data of this study.

3. Findings

This section provides the data display of both qualitative and quantitative ones alongside the related data interpretation. The display is presented through giving a couple of selected interview transcripts for the qualitative data and giving the tabulated data for the quantitative findings.

3.1. Interview results

The interview was conducted to 6 students who were purposively chosen in prior. The interview negotiated about the possible weaknesses of the existing EFL reading media which referred to the textbook commonly used at their school, and the needs for the ideal EFL reading application.

3.1.1. The possible weaknesses of the existing EFL reading media (textbook)

Of the entire interview data, there emerged a couple of themes becoming the oriented topics addressed by the participants whereby the weaknesses of the existing EFL reading media (textbook) were encountered under those themes. The themes which were coded entailed the monotonous colors of the textbook, the minimum portability of the textbook, the less automatic concept of the textbook, the limited provision of EFL reading materials in the textbook, the less readable instructions given in the textbook, the limited given exercises in

the textbook, the less direct feedback of the exercises in the textbook, and the insufficient explanations related to EFL reading skill indicators. The following presentation and the selected transcripts of the interview with the participants are given to display the interview data. Especially for the transcripts, those which are presented below are ones considered relevant to represent others that address the same notions.

3.1.1.1. The monotonous colors of the textbook

As regards the colors of the given textbook students commonly used in the learning process of EFL reading skill, mostly the participants acknowledged that the colors were not interesting. This issue aligned with participant 2's opinion that said "*the colors are monotonous. They are just white and black. Some of the given pictures are not clearly seen*" (Participant 2). Appertaining to that transcript, besides merely having two monotonous sorts of color, the brightness of the color was also obscured so that some pictures displayed in the textbook could not be seen properly.

3.1.1.2. The less readable instructions given in the textbook

The participants also depicted the quality of instruction for learning activities in the EFL reading textbook which they generally used at school. Associated with this point, participant 4 mentioned "*In a few parts of the textbook units, the given instruction is not so clear so that it is difficult to be interpreted by students. They then end up with misleading instruction*" (Participant 4). The given transcript impliedly emphasized that the instruction of learning activities which the textbook gave could not be discerned by students alone by virtue of the difficulty level which tended to be challenging. From the feature of the instruction, the textbook did not support an autonomous learning for students.

3.1.1.3. The minimum portability of the textbook

During the interview, the participants at some point also addressed the portability of the textbook. They complained about the size and weight of the textbook which impeded them to bring and use the textbook at any comfortable place to learn. This condition was in line with participant 1's perception which expressed "*The textbook used is not portable because it is quite big and heavy so it cannot be brought everywhere. To learn through the textbook really needs a particular limited place*" (Participant 1). It was implied that the students actually loved learning EFL reading at many places where they felt comfortable. However, the size and the weight of the textbook did not seem to support them for that.

3.1.1.4. The less automatic concept of the textbook

The students also mostly expected to have a chance to see their direct score of completing some EFL reading exercises. But this expectation did not seem to be conceivably reached if using the textbook. Participant 6 addressed about this point as she said: "*The textbook of course cannot automatically provide students with their scores once they are finished working on it*" (Participant 6). The sense of atomicity of the media of EFL reading materials at some degree was required by the participants.

3.1.1.5. The limited provision of EFL reading materials in the textbook

The participants also addressed the set of EFL reading materials furnished in the textbook they used. According to most of them, the materials were constantly in such a way which could not be further modified if needed. The number of the given materials was also limited owing to the permanence of hard-copy type of the textbook. This case was also expressed by participant 1 who said "*the textbook of course only has limited materials, and they have been permanently printed so they cannot be modified when needed*" (Participant 1). An implication could be inferred from this transcript whereby the participants basically required

the media which potentially provided an opportunity to be modified in case an up-to-date content was at some point necessary.

3.1.1.6. *The limited given exercises in the textbook*

The interview also went to negotiate about the EFL reading exercises provided by the textbook. Most of the students came up with the same perception in that the textbook only managed to serve the limited and permanent forms of exercises. This condition indicated that the teacher should have to provide some additional worksheets or textbooks if some time more exercises were considered important to be assigned to students, or (if not) the students would just be served by the merely available but limited exercises. This issue aligned with participant 3's opinion which said: *"the given exercises in the textbook were limited so the teacher needs to provide more additional exercises from other textbooks if any and if necessary"* (Participant 3).

3.1.1.7. *The less direct feedback of the exercises in the textbook*

The other point shared by the participants about the characteristic of EFL reading exercises given in the textbook was that the exercise did not allow students to get direct feedback of their work. It aligned with participant 6's viewpoint which said *"there are no key answers for every exercise in the textbook so the teachers are the key. The feedback really depends on the teachers, and the time of getting the feedback of exercise is, of course, limited to the availability of the teacher's time"* (Participant 6). As emphasized by this transcript, the feedback after doing EFL reading exercise only relied on the teacher, but the provision became naturally limited based on the chance or the teacher's time. The feedback system was not automatic.

3.1.1.8. *The insufficient explanations related to EFL reading skill indicators*

In connection with the provision of the ideal micro-skills of EFL reading which were covered by the textbook, all micro-skills had been provided for students. However, most students felt that the related explanations about those micro-skills which at some degree could be relied on by students to be learned independently seemed insufficient. This case aligned with participant 3's perception which said *"the textbook addresses about some indicators like main idea, explicit information, implicit information, vocabulary reference, and etc. However, there are no adequate explanations regarding those indicators to help students independently learn"* (Participant 3).

3.1.2. The need analysis for the EFL reading android application

In order to garner the data *vis-a-vis* the expected EFL reading android application, the interview was led to be oriented to the expected and particular characteristics that the students required to facilitate their reading skill improvement. The following interview transcripts drew on the students' notions, perceptions, or standpoints properly selected to be displayed since they were representative towards others' similar cognitions.

Participant 1: *"We need a sort of media which is easily operated and simply used"*.

Participant 2: *"I think we need to have a motivating android application to help us easily learn English reading skill"*.

Participant 3: *"For me, we need to keep being up-to-date for the newest materials. Hence, the media which can afford that need is really required for us nowadays"*.

Participant 4: *"We need a media that facilitates us with various EFL reading activities"*.

Participant 5: *"We sometimes need to have a media which can also be simply used outside of the class"*.

Participant 6: *"I think, we need a sort of media that can automatically control us as long as dealing with EFL reading activities"*.

Some information could be interpreted from the above transcripts whereby the participants required the presence of an EFL reading android application that entailed a range of characteristics which were simple and easily used, motivating and facilitating, leading to be up-to-date, providing various EFL reading activities, portable to be used inside and outside of the classroom, and controlling.

3.2. Questionnaire results

The following graphic and table serve the questionnaire data *vis-a-vis* the responses given by 33 students. The responses were oriented to the issues of the possible weaknesses of the existing EFL reading media. The existing media used by the school where those students learned EFL reading referred to English textbook. The given responses also extended to the issue of students' needs with respect to the expected EFL reading android application viewed by the students.

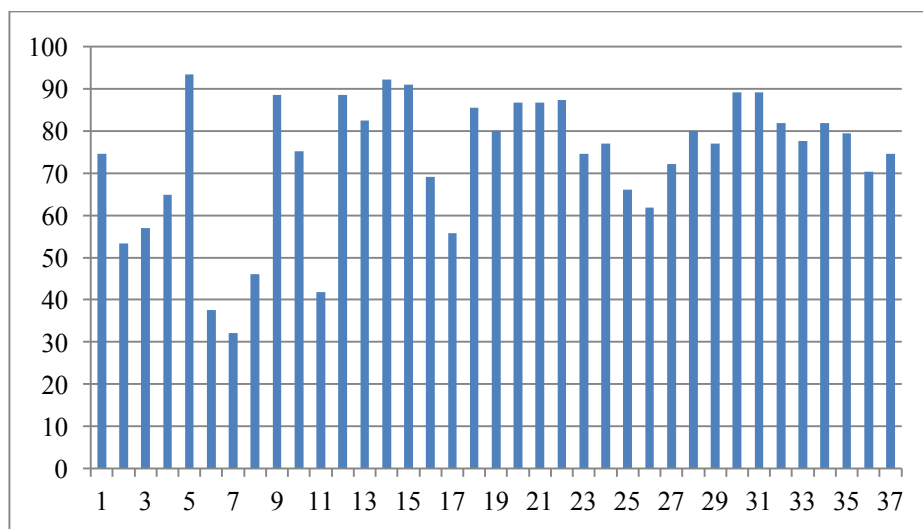


Figure 1. The possible weaknesses of the textbook and needs analysis of the EFL reading android application

Table 1. The detailed percentages in connection with the displayed figure 1

No.	The possible weaknesses of the EFL reading textbook	Percentages
1	The color of the media layout is monotonous.	75%
2	The content arrangement is difficult to follow.	53%
3	There are sentences shown in the media which are not readable.	57%
4	The pictures/icons shown in the media are unclear.	65%
5	The media cannot be inserted into students' pocket.	93%
6	The media is too thick to bring everywhere.	38%
7	The media is not possible to be brought home/possessed by every student.	32%
8	The media is expensive.	46%
9	The media cannot check the students' scores automatically.	88%
10	The content of the media is not possible to be corrected or changed.	75%
11	The media is too heavy to be brought everywhere.	42%
12	The media has no security feature.	88%
13	The media contains limited exercises related to each topic.	82%
14	There is no answer key for each exercise.	92%

15	There is no explanation related to the answer of each exercise.	91%
16	If the media is broken or lost, to supply the media is complicated.	69%
17	The media is difficult to be duplicated.	56%
18	The media cannot be used in a dark condition.	85%
19	There is a limitation of the content in the media.	80%
20	The media only covers a periodical material or topic.	87%
21	The media does not use the latest technological support.	87%
22	The use of the media cannot be controlled from a different location.	87%
23	The media is not interesting when students use it.	75%
24	The media has no reflection on learning feature.	77%
25	The media does not explain an indicator of the main idea.	66%
26	The media does not explain an indicator of the explicit information.	62%
27	The media does not explain an indicator of the implicit information.	72%
28	The media does not explain an indicator of the contextual meaning of words.	80%
29	The media does not explain an indicator of the reference word.	77%
The needs for EFL reading android application		
30	It is necessary for developing an additional media to improve the students' motivation and interest	89%
31	It is necessary for developing an affordable and simple media.	89%
32	It is necessary for developing a media whose contents can be changed or added.	82%
33	It is necessary for developing a media that can be controlled inside and outside the classroom.	78%
34	It is necessary for developing a media that provides a lot of exercises.	82%
35	It is necessary for developing a media that provides a real examination.	79%
36	There is no Android-based application as a learning media in prior.	70%
37	It is necessary for developing a media with Android-based application integrated with teaching reading skill.	75%

With respect to the data displayed in the above table, since the range of the scale of every item encompassed strongly agree (SA), agree (A), neutral (N), disagree (D), and strongly disagree (SD), the indication of a positive agreement for the whole items were interpreted if the respondents shared their agreement within the percentage 70% to 100%. Therefore, it could be understood that all the respondents indicated that the possible weaknesses of the textbooks extended to the following criteria:

3.2.1. The possible weaknesses of the EFL reading textbook

- The color of the media layout is monotonous.
- The media cannot be inserted into students' pocket.
- The media cannot check the students' scores automatically.
- The content of the media is not possible to be corrected or changed.
- The media has no security feature.
- The media contains limited exercises related to each topic.

- There is no answer key for each exercise.
- There is no explanation related to the answer to each exercise.
- The media cannot be used in a dark condition.
- There is a limitation of the content in the media.
- The media only covers a periodical material or topic.
- The media does not use the latest technological support.
- The use of the media cannot be controlled from a different location.
- The media is not interesting when students use it.
- The media has no reflection on learning feature.
- The media does not explain an indicator of the implicit information.
- The media does not explain an indicator of the contextual meaning of words.
- The media does not explain an indicator of the reference word.

3.2.2. The expected EFL reading android application

- It is necessary for developing additional media to improve the students' motivation and interest.
- It is necessary for developing an affordable and simple media.
- It is necessary for developing a media whose contents can be changed or added.
- It is necessary for developing a media that can be controlled inside and outside the classroom.
- It is necessary for developing a media that provides a lot of exercises.
- It is necessary for developing a media that provides a real examination.
- There is no Android-based application as a learning media in prior.
- It is necessary for developing a media with Android-based application integrated with teaching reading skill.

3.3. The interpretation of quantitative and qualitative data

This study found that the data garnered from the questionnaire supported and positively confirmed those solicited from the interview. The issues regarding the possible weaknesses of the existing EFL reading media (textbook) and the needs of the EFL reading android application were addressed in a similar orientation. The following tables present the results of positive conformation interpreted from both the qualitative and quantitative data.

Table 2. *The possible weaknesses of the EFL reading textbook*

The coded data of Interview	The data of the questionnaire
The monotonous colors of the textbook	The color of the media layout is monotonous. The media is not interesting when students use it.
The minimum portability of the textbook	The media cannot check the students' scores automatically. The media cannot be inserted into students' pocket. The media cannot be used in a dark condition. The use of the media cannot be controlled from a different location.
The less automatic concept of the textbook	The content of the media is not possible to be corrected or changed. The media has no security feature.
The limited provision of EFL reading	There is a limitation of the content in the media.

materials in the textbook	The media only covers a periodical material or topic. The media does not use the latest technological support. The media has no reflection on learning feature.
The less readable instructions given in the textbook	The media contains limited exercises related to each topic.
The limited given exercises in the textbook	
The less direct feedback of the exercises in the textbook	There is no answer key for each exercise. There is no explanation related to the answer to each exercise.
The insufficient explanations related to EFL reading skill indicators	The media does not explain an indicator of the implicit information. The media does not explain an indicator of the contextual meaning of words. The media does not explain an indicator of the reference word.

Table 3. *The expected EFL reading android application*

The coded data of Interview	The data of the questionnaire
It is required the simple and easily used media.	It is necessary for developing an affordable and simple media.
It is required the media leading to being up-to-date.	It is necessary for developing a media whose contents can be changed or added.
It is required the motivating and facilitating media.	It is necessary for developing additional media to improve the students' motivation and interest It is necessary for developing a media that provides a real examination. There is no Android-based application as a learning media in prior.
It is required the media providing various EFL reading activities.	It is necessary for developing a media with Android-based application integrated with teaching reading skill. It is necessary for developing a media that provides a lot of exercises.
It is required the portable media to be used inside and outside of the classroom.	It is necessary for developing a media that can be controlled inside and outside the classroom.
It is required the media that is controlling.	

4. Discussion

This study found several weaknesses of the current EFL reading media (textbook) used by the tenth-grade students at one of the senior high schools in central Java, Indonesia. They were comprised of the monotonous colors of the textbook, the minimum portability of the textbook, the less automatic concept of the textbook, the limited provision of EFL reading materials in the textbook, the less readable instructions given in the textbook, the limited given exercises in the textbook, the less direct feedback of the exercises in the textbook, and the insufficient explanations related to EFL reading skill indicators. It is in line with Ali &

Ahmad (2014) who explain that the limited forms, features, and portability of textbooks most often impede the continuity of successful education in the era of technology like nowadays. That makes a convincing case for the android application to gain its popularity in the educational field these days. Today's students have their own different and particular nature of lives. They are even called digital native (Grigoryan, 2018; Kress et al., 2001; Prensky, 2001). In their era, the expansions of knowledge they require to access are vastly growing. The limited power and potential of a mere textbook cannot optimally facilitate today's students. They need a sort of the facilitating learning media that meets their nature for the success of their education. This condition also prevails in the context of English education. They need an EFL learning media that can maintain their comfort in learning, the one which meets their digital living framework. Such a framework which students naturally have in their lives is the fundamental consideration taken by this study to develop EFL reading android application that does justice to their nature and needs.

Furthermore, this study also revealed a number of criteria needed by students in relation to the negotiated EFL reading android application. The students required an EFL reading android application which was simple and easily used, motivating and facilitating, leading to be up-to-date, providing various EFL reading activities, portable to be used inside and outside of the classroom, and controlling. Besides the nature of today's students which are technological, the encountered criteria as such are considered paramount important to be discerned in this study since they mainly become the basic points to initiate the design of EFL reading android application that is afforded by the whole project after finished with this exploration or preliminary study. Corresponding to the whole project, EFL reading android application, which is developed in progress, the application thus far has been created in the form of a prototype. This prototype has been made to conform to the needs shared by the students and to avoid the existing possible weaknesses of EFL reading media. In the last part of this paper, we, the researchers, present the current result of our prototype of EFL reading android application.

5. Conclusion

As a preliminary study of research and development project for EFL reading android application, this study reveals a range of possible weaknesses had by the existing EFL reading media (textbook). They involve the monotonous colors of the textbook, the minimum portability of the textbook, the less automatic concept of the textbook, the limited provision of EFL reading materials in the textbook, the less readable instructions given in the textbook, the limited given exercises in the textbook, the less direct feedback of the exercises in the textbook, and the insufficient explanations related to EFL reading skill indicators. The further investigation carried out by this study finds out several criteria needed for the EFL reading android application. The application is required to be simple and easily used, motivating and facilitating, leading to be up-to-date, providing various EFL reading activities, portable to be used inside and outside of the classroom, and controlling.

This study is only delimited on the exploration stage of research and development project for EFL reading android application. A further study which will progressively be conducted is the examination and experimentation of the EFL reading android application prototype. It is also recommended for other researchers to conduct further studies in the area of android application development which widens the orientation to other English skills rather than reading. Today, a portable EFL learning media like android application is not only interesting in its use but also pedagogically useful and needed.

6. The portrayal of EFL reading android application prototype

This presently displayed prototype is developed based on the exploration data striving for finding out the possible weaknesses of the existing EFL reading media (textbook) alongside the needs for the ideal EFL reading android application. The related data have been reported in the previous sections. The following details depict the aforementioned prototype.

The prototype layout of the EFL reading android application on the students' smartphone screen can be viewed in the following image:

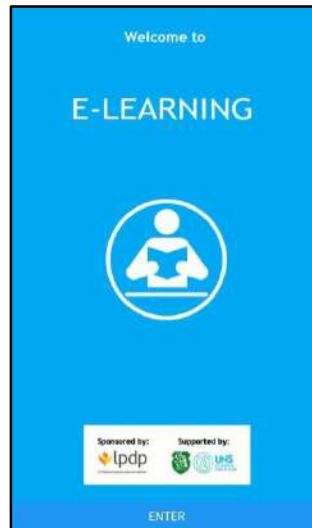


Figure 2. First Layout

In this first layout, it tells the function of this application which is mobile learning to improve reading skill, and it also tells that this project is sponsored by LPDP and supported by SMAN 1 Surakarta and Sebelas Maret University. The students can press ENTER on the screen and then move to the next layout which shows a box with the username and password based on the registration in the website server which is operated by the teacher. If the username and password are matched, the screen will show the main layout.

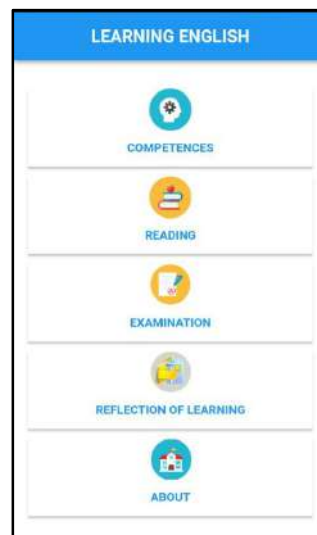


Figure 3. Main Layout

In this main layout, the students can utilize several features. Those are *competence* to know the targets of learning, *reading* to comprehend the explanation, sample text and exercise for each topic arranged by the teacher on the website server, *examination* to conduct

the real test and to measure the students' understanding, *reflection of learning* to inform the teacher in what point the students have comprehended and in what point the students have not comprehended, and *about* to inform the general information related to developing of this application to the users.

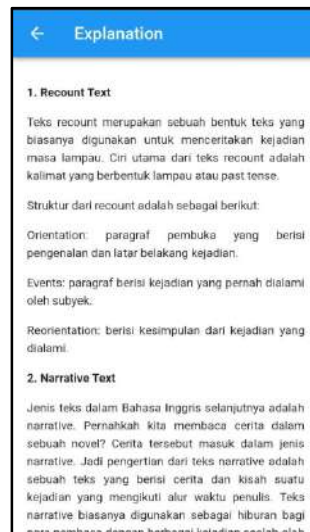


Figure 4. Explanation Layout

In this explanation layout, the students can read and comprehend the material arranged by the teacher. There is no limitation of the material inserted in this application. If the information or learning material takes a large space on the screen so the students can scroll down the layout to read the next information. Similar to all features in this application, if the teacher inserts information more than a layer so the students need to scroll down until they have completely read the information. For each topic, there will be a definition, structure of the text, and sample text based on the information provided by the teacher on the website server. All the contents in this layout or other layouts in this application can be edited, added or removed by the teacher via the website server.

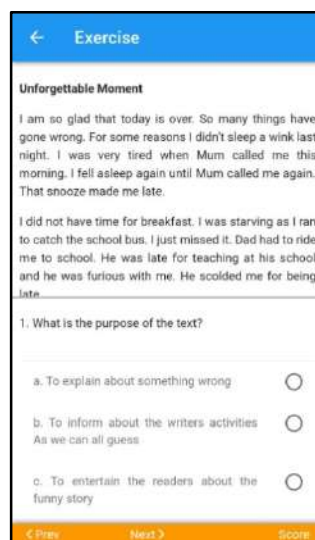


Figure 5. Exercise Layout

In this exercise layout, the students can practice their reading skill by focusing on reading the text and trying to answer each question, and in the next layout, the students can check their scores.

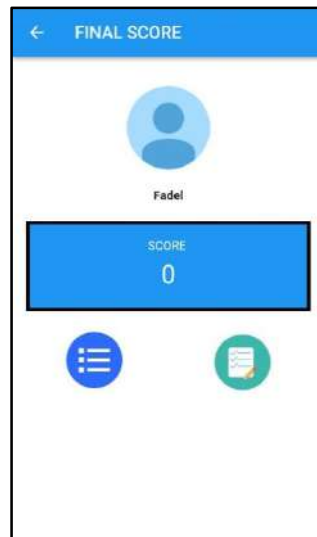


Figure 6. Final Score Layout

In this layout, the students can check their score based on their answers to each question. Concerning with the two icons under the score box, they are the icons for navigations where the students can touch the right icon to move to the exercise explanation to comprehend more the previous question and their answers or touch the left icon to go back to the collection of exercises to practice other exercises.

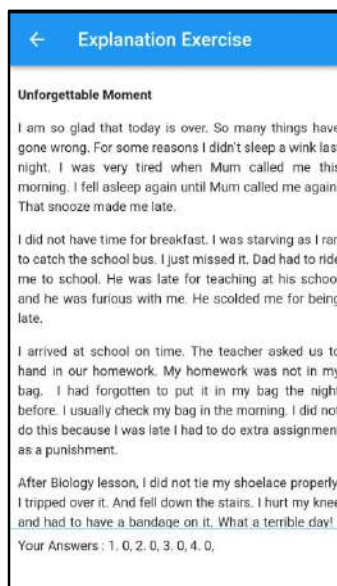


Figure 7. Exercise Explanation Layout

In this layout, the students can reread the text and questions to check their previous answers to find out which question that they answer correctly and wrongly.

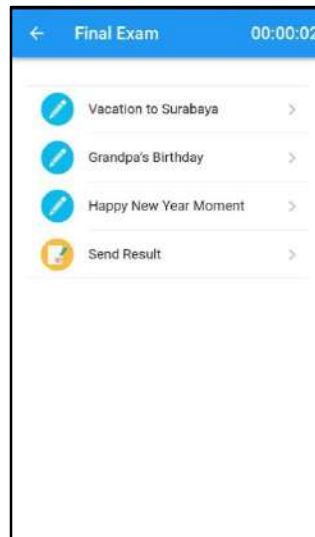


Figure 8. Final Exam Layout 1

In this layout, the students can join in the real examination of reading skill in which there is limited time to answer the question whereby the limited time has an automatic system to send the students' answers if the time is over. If the time is still available meanwhile the students have already answered the whole questions, the students can tap to send the result icon on the screen to submit their work to the website server so that automatically the timer will be turned off.

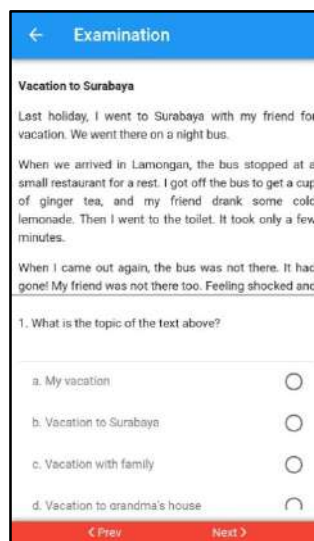


Figure 9. Final Exam Layout 2

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A COMPARISON OF STUDENT ATTITUDES TOWARDS LANGUAGES OTHER THAN ENGLISH (LOTEs) IN TURKEY AND IN THE USA

Research Article

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A COMPARISON OF STUDENT ATTITUDES TOWARDS LANGUAGES OTHER THAN ENGLISH (LOTEs) IN TURKEY AND IN THE USA

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Abstract

The study aimed at investigating learners' attitudes towards languages other than English (LOTEs). The study also explored participant instructors' views on students' attitudes towards LOTEs. In order to collect data, a language attitude questionnaire was designed by adapting Students' Attitude Toward Foreign Language (SAFL) instrument. The study sampled a total of 316 students, 261 from Turkey, 55 from the USA. University students enrolled in a second language course in the USA and Turkey were compared in terms of their responses to SAFL items as well as their attitude scores for each of the 4 dimensions. Separate confirmatory factor analyses were conducted for each sample with 4 varimax rotated, orthogonal factors. Factor scores for each individual were computed based on the weights identified by the factor analysis to obtain general measures of motivation, students' effort and instructor's role, self-confidence and self-interest, and students' anxiety. According to the research findings students learning LOTEs have favorable attitudes towards the language they are learning both in Turkey and the USA due to their interests in the cultural products of the countries speaking those languages and increasing educational opportunities.

Keywords: Language attitude, motivation, LOTEs.

1. Introduction

In today's world there has been an increasing interest and need towards learning foreign languages. For the people living in the multicultural and multilingual world of today learning one foreign language is not enough in order to communicate effectively. Therefore, the need for learning a second or even third foreign language is inevitable. Especially in Turkey which has been in the process of becoming a European Union member, the importance of learning foreign language has been emphasized more than in the past. As Boo, Dörnyei, and Ryan's (2015) current literature survey has revealed, the number of published studies in the field of L2 motivation research has grown dramatically within the last decade. Similarly, in Europe people are encouraged to learn at least two foreign languages (Demirel, 2003, p. 18) and also in the USA there has been an effort to adjust their language teaching system so that it can enable students learn more than one foreign languages (Lambert, 2001, p. 348).

One important problem in learning a foreign language is that, although they are given the same opportunity to learn, some people can learn a foreign language more easily and successfully while others find the process of learning a new language very difficult and challenging. There can be many external factors such as curriculum, teaching methods,

materials and techniques that may have an effect on this process. However, research in foreign language learning focuses more on the internal aspects of language learning. Researchers have conducted several studies regarding this issue and the results have shown that there are several factors such as differences in language intelligence (Caroll, 1990), native language skills (Skehan, 1992), motivation (Gardner, 1985), attitude (Caroll, 1990), and anxiety (Campbell and Ortiz, 1991) which might answer the question why those students may have difficulties in learning a foreign language. Findings indicate the importance of attitude in language learning since the more positive the students' attitude towards the foreign language is, the higher their grades get (Sutarso, 1996). Many researchers (Dörnyei, 1990; Dörnyei & Ottó, 1998; Dörnyei & Skehan, 2003; Gardner, 1985; Gardner & Lambert, 1972) claim that attitudes play a vital role in the way people behave as their attitude towards the target language and culture have an influence on all of their responses to the target language. Attitudes of the individuals learning a foreign language can be affected positively and negatively depending on their experiences in and outside the classroom. If a student falls short of accomplishing one task in a language class, this negative attitude can be generalized to a dislike of the whole process of language learning. On the other hand, "if a student has a positive attitude towards the whole school this can profoundly affect one's specific L2 learning disposition" (Dörnyei & Ottó, 1998, p. 50). For this reason, students should have a positive attitude towards the target language so that they can be successful in the language classes.

Many researchers have tried to define attitude. However, the one that Smith took from Milton Rokeach is the most extensive. Rokeach defines attitude as "a relatively enduring organization of beliefs around an object or a situation, predisposing one to respond in some preferential manner" (cited in Smith, 1971). Smith explains this definition firstly referring to the enduring nature of attitudes. He stated that attitudes are enduring because they are learned, and therefore they can be unlearned. As they are learned, they can be taught. He claims that we can teach students to like a foreign language. If students come to the language classrooms with neutral or positive attitudes about the target language, their attitudes about language and learning will be influenced by the situation itself (Smith, 1971, p. 82). He also refers to the idea that attitudes develop within a frame of reference. As attitudes are situational, they can be generalized. He counted language, teacher, class, books and assignments as being within the frame of reference of learning and within the situation of school. Therefore, if students don't like learning and school, teachers and assignments, they can generalize this dislike to learning a new language. That's why we need to raise positive attitudes and feelings in order to increase the efficiency of the students in language learning classes (Smith, 1971, p. 82).

There are several factors in second or foreign language learning that may have an impact on the formation of learners' attitudes. The first one is affective factors. Gardner (1985) divided affective factors into two categories: (a) factors prior to learners' approach to the second or foreign language study and (b) factors that develop during the learning process. As for the factors prior to learners' approach to the second and foreign language Gardner emphasized the importance of integrative motivation over instrumental motivation as it may be more powerful in facilitating successful language learning (1985, p. 14). The second category involves the experience that the second or foreign language learner has in the language learning setting which may result in different attitudes towards the learning situation. Atchade (2002) also mentioned personality factors as having an impact on learners' attitudes. For example, an ethnocentric person who views the group he belongs to more important than others most probably show a negative attitude towards the target language. Another factor is social influence. Researchers maintain the belief that the social context may

have an impact on second or foreign language learners' attitude (Gardner, 1988; Norrish, 1983). Atchade (2002) mentioned other sources of influences on learners' attitudes towards learning a second or foreign language as parents because the way parents view the second or foreign language has an effect on learners' developing negative or positive attitudes; teachers as they should be aware of the fact that learning a foreign language involves both cognitive and affective stages and learners as sometimes learners do not make any effort to learn a foreign language.

Numerous studies were conducted in this area to show the positive effects of foreign language attitudes on academic success (Bartram, 2010; Hermann, 1980; Gardner & Lambert, 1972; Ellis, 1994; Lightbown & Spada, 2011; Masgoret & Gardner, 2003; Scherer & Wertheimer, 1964; Van Els et al., 1984). As attitudes have such an important impact on foreign language learning it is very important to measure it accurately. However, existing studies about foreign language learning and motivation mainly depends English as a foreign language or as a second language, therefore conceptual reframing of L2 motivation depend heavily on English (Duff, 2017; Ushioda & Dörnyei, 2017). This is why researchers think it is questionable how applicable the theories and findings that constructed our understanding about the motivational processes of learning languages other than English (LOTES) (Duff, 2017). As there is this strong bias on global English in the both empirical and theoretical research on motivation and attitudes towards learning languages, it is clear that other languages are currently much less well represented in L2 motivation research (Ushioda & Dörnyei, 2017) which means there is a need for theoretically differentiated approaches to understand L2 motivation in relation to the target language that is being taught (Dörnyei & Al-Hoorie, 2017).

In that sense some researchers question (Ushioda & Dörnyei, 2017) the impact of English on language learning motivation. Studies showed that students are generally aware of the global status and therefore the importance of English and this affects their attitudes towards learning LOTES negatively (Busse, 2017; Dörnyei et al., 2006; Henry, 2011). Or in some cases, as students are aware of the importance of English to find a job and the education system highlights the importance of English, it was sometimes perceived as a threat to their identity and resulted in adverse attitudes toward learning English (Busse, 2017).

In terms of the motivation research conducted in the United States, the focus is generally on heritage language learners (Oh & Nash, 2014; Xie, 2014), the integration of technology into the classroom (Cai & Zhu, 2012), or studying abroad (Martinsen, Alvord, & Tanner, 2014). Thompson and Vásquez (2015) carried out a research about the motivation of adult learners of LOTES (Italian, Chinese, and German) in the U.S.A., all of these learners were very advanced users of the target language and also had experience teaching that language, and thus, were not enrolled in university courses at the time of the study. There have been several studies that aimed to develop or adapt scales to examine students' attitudes towards language teaching in Turkey as well. Most of these studies focused on scale development (Akay & Toraman, 2014; Aydoslu, 2005; Çakıcı, 2001; Dağlıoğlu, 2004; Gömleksiz, 2003; Genç & Aksu, 2004; Selçuk, 1997; Üzüm, 2007) whereas there are limited scale adaptation studies (Gürel, 1986; Tunç Özgür, 2003; Tunçer, Berkant & Doğan, 2015). Moreover, all of these studies conducted in Turkey focused on investigating the attitudes of university students towards learning only English as a foreign language. On this note, in this study it is aimed to contribute to the existing attitude scales by adopting a scale to measure students' attitudes towards learning LOTES and more importantly it reports on the attitudes of learners of LOTES in two different countries, focusing mainly on the diversity of students' attitudes in language learning process.

Two central questions guided the research. The first prompted an exploration of the attitudes of university students in two universities in two different countries toward learning LOTE in terms of their motivation, effort and instructor's role, self-confidence and self-interest, and anxiety while the second permitted a focus on the perspectives and experiences of teachers' of LOTE.

To this end, the following research questions were formulated to guide the present study.

- (1) Is there any significant difference between the attitudes of university students in two universities in two different countries toward learning LOTE in terms of their motivation, effort and instructor's role, self-confidence and self-interest, and anxiety?
- (2) Is there any difference among the perspectives and experiences of teachers' of LOTE?

2. Methodology

2.1. Research design

In the current study, an explanatory sequential mixed method design was employed (Creswell, 2014). First, quantitative data was collected and analyzed and then in order to get a deeper understanding of the results and to validate the results, qualitative data was collected with the focus group interviews.

2.2. Setting and participants

The quantitative part of the study was conducted with 55 university students from the US and 261 students from Turkey who participated in the main study. The US sample included students studying French (61%) or Spanish (39%), whereas the Turkish sample included students learning French (61%), Spanish (18%) and Italian (21%). Both groups were compared in terms of their responses to individual items as well as their attitude scores for each factor. Ethical approval for this multi-site study was obtained from the respective Human Subjects Research Ethics Committees of both universities.

The qualitative part of the study was conducted with 6 instructors. Three out of 6 instructors taught LOTEs at a major state university in Turkey. Other three instructors taught Turkish at a prestigious university in the USA.

2.3. Research instruments

2.3.1. The Students' Attitude Toward Foreign Language (SAFL) instrument

The SAFL instrument was designed by Sutarso in 1996 to assess variables associated with students' attitudes towards second language use and learning. The original instrument is comprised 27 items that covered the following variables that are considered to affect students' attitudes; foreign language anxiety, self-confidence, self-interest, family background in foreign language, gender, motivation/usefulness, students' effort, instructors' role. After the item analysis 4 items with low discrimination indices were dropped. So the original instrument was composed of 23 items. Responses were collected with a 5-point Likert-type statements ranging from 1, not describe me, to 5, describes me, indicating to what extent the individual thinks the statement describes him/her in each item. The internal consistency (Cronbach's alpha) of the scale was .8712 with the Standardized item alpha is .8704. Factor analysis on the SAFL instrument revealed four factors based on the Eigenvalue criterion after a Varimax orthogonal rotation, namely Motivation, Students' Effort and Instructors' Role, Self Confidence & Self Interest, and Students' Anxiety. These factors accounted for 17.52%, 14.33%, 10.35% and 10.33% of the total variance. The SAFL is

based on the theoretical constructs, literature review, table of specification, and expert opinions, which contributed the content validity of the instrument.

Cross-cultural adaptation and reliability of the Turkish translation of the SAFL will contribute towards establishing the SAFL as a cross-cultural measure and enable cross-national comparative studies. Before the adaptation studies started the necessary permission was obtained from the author of the instrument. We followed the general guidelines for adapting an assessment instrument to a culture and language population (Geisinger, 1994).

2.3.2. Focus group interview questions

Focus groups were carried out to explore the items identified by the survey from teachers' of LOTE's perspective. Semi-structured questions were designed to elicit discussion about students' attitudes towards learning a LOTE and the factors affecting their attitudes in both countries with probes for items raised in the SAFL instrument analysis if they did not come up spontaneously. Teachers who had experience of teaching a LOTE in Turkey and USA were invited to participate in the focus group interviews. Two separate 60/58-minute focus groups were conducted (1 for teachers of LOTEs in Turkey and 1 for teachers of LOTEs in USA). Focus groups sessions were tape recorded and transcribed.

2.4. Data collection procedure and analysis

55 university students from the USA and 261 students from Turkey participated in the main study. The USA sample included students studying French (61%) or Spanish (39%), whereas the Turkish sample included students learning French (61%), Spanish (18%) and Italian (21%). Both groups were compared in terms of their responses to individual items as well as their attitude scores for each factor. Ethical approval for the study was obtained from both Institutional Review Boards of University of Pennsylvania and Hacettepe University.

The SAFL instrument was translated from English into Turkish by two translators, which was evaluated through the back-translation method (Brislin, 1970). In the first stage two independent translators, translated the instrument from English into Turkish and then come together to solve any discrepancies in the 2 different versions of their translations, and formed the verified Turkish translation. To verify the translation procedure back-translation method was also used (Brislin, 1970). Two different translators translated the Turkish version back into English. In the second phase an English-speaking language expert and a Turkish-speaking language expert compared the original test with the back-translation to make sure that there is not any essential meaning change and to minimize the cultural differences. One of the experts mentioned that the back-translation versions of the 23rd item might indicate a slight difference from the original. The original sentence was like; 'I see my instructors when I do not understand something in my foreign language class', while the back-translation was 'If there is something I don't understand in foreign language courses, I will ask my teachers'. The expert mentioned that that might indicate seeing the teacher during the office hours while the translated version indicates asking questions in the classroom. Turkish version of the item revised by two experts and as a result we do not believe that the above-mentioned aspect of difference can create a construct bias in regard to the concept of attitude towards foreign language use and learning. We see the translation of the item as reasonable and valid. A team comprised of the authors and the translators reviewed the translations and finalized the Turkish version by taking into account all the comments made to represent the common judgment of the group. We worked with 6 domain experts with experience in both languages and cultures, and with the students of the target population.

The translated survey was administered to 213 students at Hacettepe University, who were attending a second language course other than English. A confirmatory factor analysis was

performed over the 23 items for the Turkish sample. A KMO measure of .796 suggest that the sample size was appropriate. As in the SAFL study, a principal components based factor analysis was carried out with varimax rotation. The scree plot supported the use of 4 factors (Figure 1), which altogether accounted for 56% of the variability in the data. The percent variance explained by each factor are: 25.15 % by factor 1, 13.80 % by factor 2, 10.76 % by factor 3, and 5.89 % by factor 4 respectively (Table 1). The Cronbach Alpha was found to be .76, which suggests that the translated instrument is reliable to use for the purpose of measuring students' attitude towards learning a foreign language.

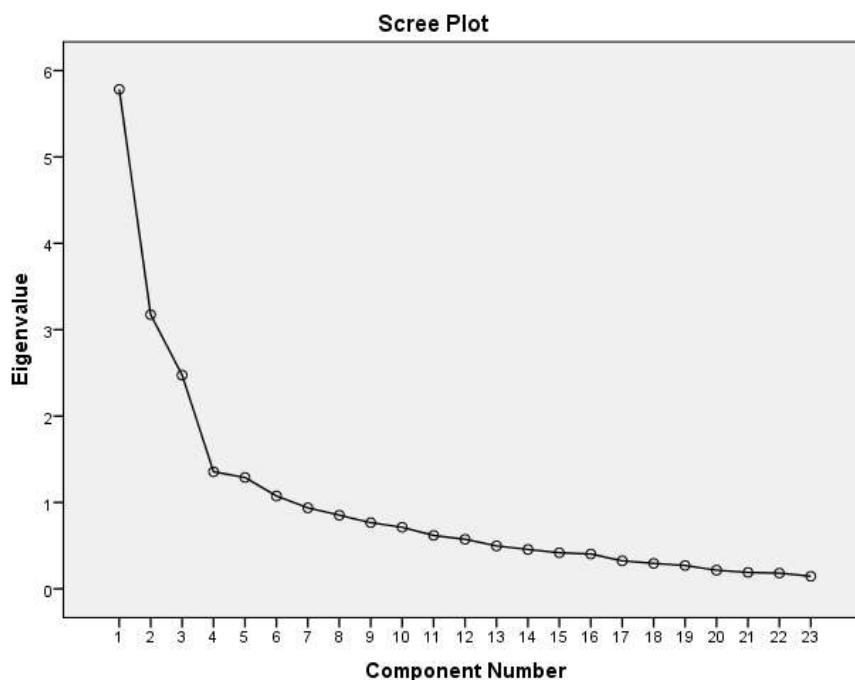


Figure 1. Scree plot for the confirmatory factor analysis conducted for the validation data.

Table 1. Eigenvalues and the total variance explained by the 4 components for the validation data.

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	5.783	25.145	25.145
2	3.174	13.802	38.946
3	2.474	10.755	49.701
4	1.355	5.891	55.592

University students enrolled in a second language learning course in the US and Turkey were compared in terms of their responses to SAFL items as well as their attitude scores for each of the 4 dimensions. Separate confirmatory factor analyses were conducted for each sample with 4 varimax rotated, orthogonal factors. Factor scores for each individual were computed based on the weights identified by the factor analysis to obtain general measures of motivation, students' effort and instructor's role, self-confidence & self-interest, and students' anxiety.

As for the analysis of the focus group interviews, two investigators familiar with the focus groups carried out the focus group analysis using a grounded theory approach to explore items raised in the SAFL instrument and to get a deeper understanding of about students'

attitudes towards learning a LOTE. As a result of the analysis 5 broad thematic categories were generated from the focus group discussions; (1) English as L2 is an advantage most of the time, (2) better motivated for LOTE than English, (3) the affordances of learning environments, (4) limited learning resources, (4) self-confidence. Coding consensus was achieved through discussions between the researchers.

3. Findings

3.1 Quantitative results

University students enrolled in a second language learning course in the US and Turkey were compared in terms of their responses to SAFL items as well as their attitude scores for each of the 4 dimensions. Separate confirmatory factor analyses were conducted for each sample with 4 varimax rotated, orthogonal factors. The factor structures corresponding to the US and Turkish groups were then compared by computing Tucker’s coefficient of congruence after conducting a Procrustean rotation as implemented in SPSS by Wuensch (2016).

Figure 2 below shows the average ratings of students from both groups for each item used in the analysis. The average ratings for each item by each group were consistently above or below 3 out of 5 for positive and negative items respectively. Based on the bar chart in Figure 2, we can conclude that in general the students' attitude toward foreign language is positive in both groups.

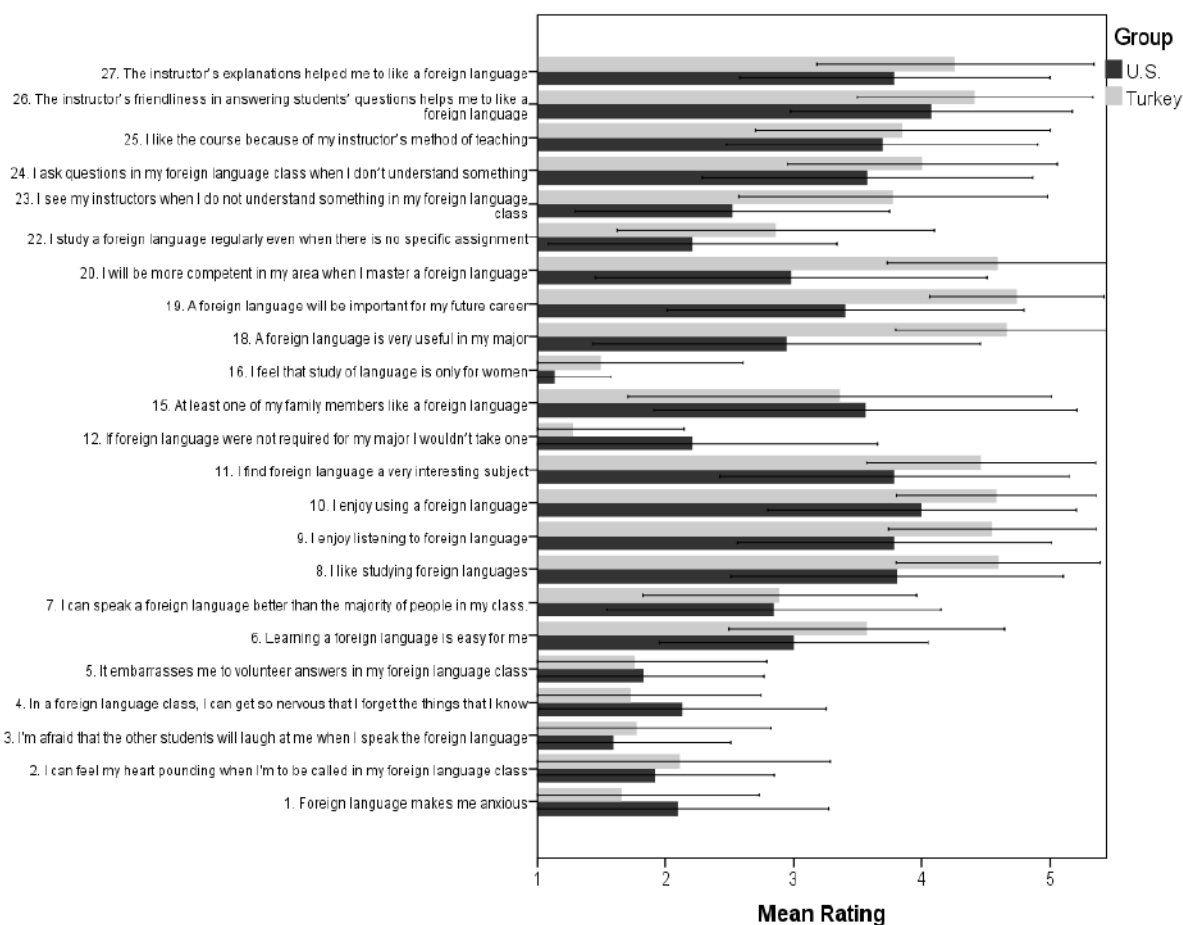


Figure 2. Mean ratings of students from the U.S. and Turkey for each survey item. The error bars indicate standard deviation.

Figure 2 suggests that the average ratings of students from the two groups are similar for all items. In order to check whether both groups had similar underlying factor structures, we carried out two separate confirmatory principle axis factor analyses with a varimax rotation over 4 factors on the US and Turkish samples. Table 2 below summarizes the percentage of the variance explained by the 4 factors for each sample.

Table 2. *Eigenvalues and the total variance explained by the 4 components for the confirmatory factor analysis on US and Turkish samples*

Group	Component	Eigenvalues		
		Total	% of Variance	Cumulative %
USA	1	6.572	28.574	28.574
	2	3.390	14.738	43.312
	3	2.360	10.260	53.572
	4	1.635	7.110	60.682
Turkey	1	5.293	23.015	23.015
	2	2.787	12.117	35.132
	3	2.318	10.080	45.212
	4	2.019	8.780	53.992

Next, the factor loadings of the the two models were subjected to a procrustean rotation to align the principle axes obtained for both groups. Finally, a Tucker's coefficient of congruence is computed for each aligned factor, which are summarized in Table X below. The congruence levels indicated a high degree of similarity for overall motivation, effort and instructor's role, and students' anxiety (Lorenzo-Seva & ten Berge, 2006). A slightly lower level of similarity is observed for the Self Confidence and Self Interest dimension, which seems to be due to relatively higher average ratings of Turkish students on items such as "I enjoy listening to a foreign language" and "I enjoy using a foreign language".

Table 3. *Factor labels, corresponding items with highest loading and Tucker's coefficient of congruence values obtained between U.S. and Turkish samples for each factor.*

Factor Label	Items with High Loadings	Tucker's Congruence
Overall Motivation	19, 18, 20, 12, 8	.82
Effort and Instructor's Role	27, 26, 25, 24, 23	.90
Students' Anxiety	2, 4, 5, 3, 1	.84
Self Confidence & Self Interest	10, 6, 9, 7, 11	.71

3.2. Qualitative results

In the present study, perspectives of teachers of LOTEs with teaching experience in both countries were compared and contrasted in terms of factors effecting students' attitudes

towards learning LOTEs. As a result of the analyses 5 categories were found, (1) the affordances of learning environments, (2) limited learning resources, (3) self-confidence, (4) English as L2 is an advantage most of the time, (5) better motivated for LOTEs than English. Two of these categories are specific to the teaching of LOTEs in Turkey. They were added to the analysis nonetheless, as they are believed to be essential factors influencing students' attitudes towards LOTEs in Turkey and not including them would draw an incomplete picture of the situation in Turkey. Also researchers agreed not to mention these themes in the focus group discussion of teachers with teaching experience in US anyway as it is an English speaking country while English is the dominant foreign language which is being taught as a compulsory course in Turkey. Therefore, the focus will be on the three comparable themes between the two countries first and then the two Turkey-specific themes highlighting their significance for students' attitudes toward language learning will be mentioned.

3.2.1. The affordances of learning environments

One of the most important factors effecting students' motivation to learn is the affordances of learning environments. Having technologically well-equipped and comfortable classroom environments can have direct effect on learning. Both groups of teachers mentioned the influence of the affordances of the learning environment on their students' attitudes towards learning a LOTE as illustrated in the following excerpt from a teacher;

'Language learning process is directly related to the physical conditions of the learning environment apart from the teacher and the students. Having effective learning environments is as important as students' own efforts to have positive attitudes towards learning a language'.

The focus group analysis showed a difference in terms of the efficiency and structure of the learning environments in two countries. Teachers of LOTEs in Turkey mentioned having some problems with their classrooms, for example one of them said:

'Even though we are working at a prestigious university in Turkey, we do not always have good classroom conditions. We sometimes teach in classrooms where there is not enough light or the classroom might not be cleaned properly. If we turn on the air-conditioning for fresh air, the students can not hear my voice because of the noise it makes.'

Another teacher mentioned:

'In some classrooms the desks are fixed the way they are so it is not possible to move them. But some times we need U-shape classroom design to promote interaction among the students. They need to see each other, or else how are you going to have pair or group discussions, they cannot interact with each other. Or worse, in some classes students' desks are fixed towards the wall but the board is on the other side of the classroom, as the desks are immobile, they are not able to see the board.'

On the other hand, teachers with experience of US mentioned that the learning environment they had was designed to support the teaching philosophy and curriculum of the course as the following excerpts illustrate;

'Physical conditions were good, we had computer units in classrooms, they were secured with cables and stuff...'

'Having good physical conditions make it possible for us to do some cultural integration activities, such as cooking Turkish coffee in a Turkish language classroom or watching Nasreddin Hodja cartoon because something related come up

in the classroom. These motivate students a lot and they learn related concepts in the context and connected with the culture, and this change a lot of things.’

These responses suggest that the affordance of the learning environment is considered to be important by the teachers of LOTEs to help students develop a positive attitude towards learning languages.

3.2.2. Limited learning resources

Another theme that came out of the analysis is about the learning resources. Both groups of teachers of LOTEs believe learning resources like textbooks, software, videos or recordings for LOTEs are not adequate. To overcome the problems of teaching with limited resources, teachers have to put extra effort, as they believe the importance of the variety and quality of the learning resources for students’ attitudes. The following fragments show perspectives of teachers with US experience;

‘When we think about materials we cannot say that they are at the same quality and/or quantity of the materials available to teach English, they are limited. There need to be more books and materials available... Teachers are very important in terms of what they share with their students to teach them both the culture and language, I mean books and materials are important but teachers are beyond that. We followed a series of video clips for example and these had positive effects on students’ attitudes and motivation.’

‘When we think about materials we cannot say that they are at the same or quantity of the materials available to teach English, they are limited. There need to be more books and materials available...’

However, teachers with US experience also mentioned that institutional support was very effective in terms of improving whatever resources available and making them more accessible both for the teachers and students;

‘Books that you want can be brought to the bookstore, and there is this section they have in bookstore where the name of the teacher and course is written and the book that are going to be used in the course. And even better, under it you can find some used books, which are cheaper. These are good, very motivating. For anyone who ones to study, the resources are available.’

‘There is the Blackboard, which is a virtual learning environment and course management system; you can share materials you want online with your students. It made it very easy in terms of sharing the any resource you have as a teacher. Second hand books are easily available.’

On the other hand, teachers with experience teaching LOTEs in Turkey mentioned bigger problems. Their responses point out that resource constraints can engender the quality of the instruction and students’ motivation to learn the target language.

‘At the same time, we have problem like that, we have the teacher, design the program but we do not have books, I mean communicative textbooks at least. Especially it was the case for French, it was not until 3-5 years ago that we started to have some learning materials. I think the reason is that in 1960s Europeans left the Grammar Translation Method and 1970s they started using Communicative Method, but we still have schools that apply the grammar translation method. I think, one reason for this is that private and government institutions are based on exams like YDS (Foreign Language Proficiency Exam). In such exams the focus is on grammar rather than four basic language skills...In this sense we did not have a book available

until 3-5 years ago, then Ministry of Education published a book which focuses on 4 skills and is also cheap. Otherwise we have to buy books abroad.'

Buying books abroad does not solve the problem the teachers and students of LOTE face completely.

'In this subject, I want to add something, we buy our books abroad but in terms of Spanish I can say that the books are designed for European people. Apart from the grammar explanations the listening recordings are really difficult for our students to understand. It is almost a miracle to do these activities in classroom with the students. I mean, those books also have such problems.'

'And students access to the learning resources is also problematic. They use pirated textbooks mostly otherwise it is impossible for them to buy the books, they use photocopies, I only had one or two students who bought the original books, this is something important in terms of their motivation though.'

The fact that most students are using photocopies affects the learning quality in some ways. One of the teachers explain how this affects the instructional pacing which could have detrimental effects on delivery procedures, classroom management and both teacher's and students' motivation.

'For example, you prepare something about colors and teaching this from a black and white book would be ridiculous. Or sometimes some students in the classroom have colored photocopies or pirated books while others have black and white. And you ask a question some gets it but some does not because of the books. Students need to be able see and compare what they hear with the visual they have. Even this effects the reciprocity in the classroom and most of the language learning activities are based upon this reciprocity.'

3.3.3 Self-confidence

Although results of the SAFL instrument did not reveal any significant difference between these two cohorts of students in terms self confidence and students' anxiety, focus group analysis showed otherwise. While teachers of LOTE with US experience mentioned how confident their students in classroom, teachers with Turkey experience said students are dramatically affected by the fear of being wrong in the classroom. Fragments of teachers of LOTE with US experience;

'First of all, students are comfortable about the homework and exercises, they do everything they can do, with out any anxiety, without being afraid of making mistakes, without being afraid of criticized. For the things that they were not able to do they would just come up and say I could not do this, that simple.'

'For one thing they are self-confident. They know to embrace their mistakes in classroom and that makes it easy for them to learn. I mean even if they have problems in the target language, this does not seem to effect their motivation or attitude. They keep trying and seemed to be very confident in fulfilling their duties, homework or in-class exercises.'

Self-confidence is extremely important in language learning and it is a well-known fact that it creates a vicious circle. Students with self-confidence learn more and gain more confident while students with low-self esteem struggle in learning the target language at the desired level and continue to have low self-esteem. This affects students' language anxiety and willingness to participate. Teachers with Turkey experience highlighted this in their

response as a factor to effect students' attitudes and mentioned that their students do not feel very confident in their language ability in general;

'Well as it is anew language, and for Italian for example, it has a certain accent, they are so shy about it. If I say this like this will everybody laugh kind of shyness. For this reason, I choose some activities to encourage them to get to know each other. As it is an elective course, they are coming from different departments, they see each other for this course only, so for this reason I guess they shy away from each other a little bit.'

'What if I can't pronounce it correctly, what if I say something wrong? I can see these concerns in their faces. And teachers' classroom management in these cases also effect students' attitudes and willingness. If I form wrong sentences would they laugh at me and how would the teacher react in that case? If the teacher is friendly and encourages having fun while learning, students can say I can make any mistakes, not big deal and focus more on communication.'

3.3.4. English as L2 is an advantage most of the time

Teachers of LOTEs in Turkey, in our case, think that their students' prior language learning experience with English makes it easier for them to learn the 3rd language since the L3 learner has already acquired one L2. They claim these students are more experienced language learners and have developed some language learning strategies. As participants said;

'I think we as the teachers of Spanish, Italian or French are luckier than the teachers of English whose courses are compulsory. The students would come to our classroom with an understanding of, a notion of a language, I mean before they came to our class they develop some language learning skills. Frankly, generally this makes our life easier.'

'As my friend says they came to our classroom knowing a foreign language and we are teaching them an other one and this very advantageous for us in many ways.'

'First of they know English as a second language... in terms of understanding in general rules, this is, I mean like subject, verb kind of.. this is convenience for us.'

These fragments indicate that teachers of LOTEs believe knowing English as L2 has benefits in the process of learning a LOTE as a third language. They found that this experience somehow presupposes a degree of progression in gaining command of a third language, which produce mutually advantageous outcomes for both the teachers and students.

3.3.5. Better motivated for LOTEs than English

There is range of motivation for students to learn a language and motivation influence students' effort tremendously. According to the analysis of our focus group interviews with teachers of LOTEs in Turkey, students are more motivated to learn a LOTE than English. Teachers of LOTE consider themselves as lucky in that sense. One teacher said;

'When we look at the motivation for learning a language we are luckier as teachers of LOTEs. They choose these courses, they are here because they want to.'

‘In general students we have in LOTE classrooms are more motivated than students who are learning English as compulsory course. They came like I heard Spanish in that song, Ricky Martin, Shakira..’

Students’ this self-interest manifests it self in-class and out of class activities they do. These can be both seen as signs of positive attitudes they have towards learning the target language and at the same time a way to develop more positive attitudes;

‘I had this student, at first she needed some guidance but then she even went to Italy with her own efforts. She is graduating this year, she is from English Language and Literature department, and she shows this deep interest to Italian that she did not show to English. She is really committed, she translated a book form Italian by herself, now she writes and translates all forms of correspondence basketball tournaments and games.’

‘I had a group of students like that.. one of them translated a horror movie from Spanish by himself. Others students in that classroom were from English Language Translation and Interpreting Department and we translated a Spanish teachers’ story book to Turkish as a class as part of the course and then they finished the rest out of the classroom and now it is going to be published with my edits.’

These fragments indicate students’ interest in the culture of the target language and how it influences their attitudes towards learning the language. They are better motivated to learn a LOTE of their choice than English. Participants in our study think the reason for the difference in students’ motivation between LOTEs and English as a second language is related to the fact that English is compulsory for students in Turkey.

‘There are very few students who learn English as an elective course, they have it like compulsory, this is really unpleasant both for the students and teachers. We have some colleagues who work really under difficult circumstances in that sense. Teaching a language to students who are not interested in learning is exhausting. In that sense as teachers of LOTEs we are lucky. I believe the moment it becomes compulsory students’ motivation will start to drop. There students who like but can not speak English but in this education system they see it as an obstacle to handle, as an obligation, something that needs to be done.’

Teachers with teaching experience of both LOTE and English also highlighted the same theme from a different perspective. They highlighted the difficulties they experience to motivate students of English as they are not motivated enough to learn the language. The following statements show that compulsory language courses appear to actually be ineffective and require a lot of effort on teachers’ side to motivate the reluctant students. Students simply respond negatively to the pressure.

‘Students have some interesting reactions/protests to this notion of compulsory language learning I think. For example, I had some students who are studying Korean in my English classroom.’

‘When we are teaching English here we always have this motivation concern. I mean it is like we are teaching them English against their will. I always spend time to motivate my students in my classrooms when I am teaching English, like this is very important for your future and personal development kind of talk. But this not the case for elective LOTEs.’

4. Discussion

The main purpose of this study was to compare students' attitudes towards learning LOTEs in Turkey and USA and explore factors affecting their attitudes. Overall, it was found that students' in both countries have positive attitudes towards learning LOTEs and there was not any significant difference between the two selected cohorts of Turkish and American students.

The positive attitudes that the students display could be because of the fact that the LOTEs included in this study were elective courses in both countries, which means most of the students take these courses just because they want to. This was confirmed by the focus group interviews as the teachers of both groups stated positive influence of being able to choose a course on students' attitudes and motivation.

This study found that according to the teachers of LOTEs learning environment is significantly associated with students' attitudes and in comparison to USA, learning environments in Turkey lacks some important features that might trigger student disengagement such as fixed desks that would not allow face to face interaction when necessary.

The majority of the teacher statements showed that the learning resources available for LOTEs are limited compared to the resources available for teaching English. When the dominant position of English as a foreign language in academia (Dörnyei et al., 2006; Henry, 2011) considered, it is quite understandable that there are not as many learning resources as there are for teaching and learning English. When the differences in the quality of learning environments and resources between Turkey and USA appeared in focus group interviews considered, we believe it can, at least partly, be explained by the fact that the participant university from Turkey is a public university whereas the participant university from USA is a private university.

The findings from the focus group interviews highlight considerable differences between these two cohort of students in terms self confidence and students' anxiety in language learning, however results of the SAFL instrument did not reveal any significant difference. Teachers pointed out that when compared to Turkish students, American students generally were more comfortable in participating classroom activities in front of their classmates and showed more confidence in their language learning abilities. This might be related to the cultural differences between the two countries. Learning culture in Turkish education system is not known to develop students' confidence. Approaches like student centered learning or communicative are still considered novel and sometimes viewed with skepticism.

One interested finding of this study is that teachers of LOTEs in Turkey believed that the fact that most of the students learnt English as L2 makes it easier for them to learn an other language and they seemed to have a more positive attitude towards learning LOTEs compared to learning English. This finding is in contrast to the studies that showed that students are generally aware of the global status and therefore importance of English and this affects their attitudes towards learning LOTEs negatively (Busse, 2017; Dörnyei, Csizér, & Németh, 2006). We believe this is mostly due to the required status of compulsory English courses.

5. Conclusion

From a language learning perspective, the findings are encouraging on two counts. Firstly, the positive attitudes of students towards LOTEs in spite of some factors that could affect students' attitude negatively are promising for multilingualism and intercultural understanding. Secondly, when students are provided with opportunities to exercise agency to

intervene in their learning paths, such as to be able to choose which language to study, they leverage efforts and resources effectively.

The findings of this study highlighted some factors that could be used as reference for developing the future language policy for LOTEs. For example, it pointed out the importance of agency in language learning. Students enrolled in LOTEs in this example have been characterized as holding positive attitudes towards the target language and as intrinsically motivated. Focus group analysis indicated student agency in choosing a foreign language course affected their attitudes towards language learning and effort to become autonomous learner as motivation and agency are known to be closely interrelated (Brown, 2014). In other words, differences in the sense of agency influence students' attitudes and decision making in their language learning endeavors (Van Lier, 2010).

This study underlined the importance of taking into account differences rooted in the factors related to the target language and its culture when designing or adopting approaches to help students to develop positive attitudes towards learning foreign languages and increase students' motivation. Nevertheless, there are several limitations to this study that suggest the need for future research.

While the current findings are not intended to be generalizable beyond the very particular context in which the research was conducted, the sample size was relatively small. Larger sample studies may be more insightful. Furthermore, participant group distribution is important, as the present study did not have equivalent group distribution due to the differences in the number of the students at two universities.

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AN INVESTIGATION OF VISUAL PERCEPTION LEVELS OF PRE-SCHOOL CHILDREN IN TERMS OF DIFFERENT VARIABLES

Research Article

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Abstract

Pre-school ages, which is the period of rapid development of all developmental areas, is the stage in which children acquire visual perception ability and this ability acquisition process accelerates between the ages of three and seven. Visual perception that accelerates during childhood, is an important factor for academic and motor skills which are essential for school success. In this research, it is aimed to examine visual perception levels of preschool children according to various variables. The research was conducted through the survey model. The study population is consisted of children aged 5-6, who are attending preschools affiliated to the Ministry of National Education in Kadıköy, Maltepe, Beşiktaş and Sarıyer districts on Anatolian and European sides of Istanbul. The sample of the study consists of 114 children aged between 5-6 years and who study in preschools affiliated to the Ministry of National Education in these districts. The "Visual Perception Scale for Preschool Period" and personal information form were used to collect data for the study. Data were analyzed with Mann Whitney U test and Kruskal Wallis one-way analysis of variance. According to the results of the findings, while preschool children's visual perception levels do not differ according to the gender, age and duration of education variables; there is a significant difference in favor of high-middle socio-economic level based on the socio-economic level variable. The findings are discussed in the framework of the relevant literature.

Keywords: Visual Perception, Visual Perception Level, Preschool Period, Preschool Children.

1. Introduction

Perception means comprehending something by directing attention to it (Turkish Language Association, 2017). When an individual receives stimuli, his or her perception creates

sensations and he/she starts to work on these sensations. Sensations are formed through a mental process after being affected by various individual factors like perceptions of sensory organs, mental states, past experiences, mental processes and knowledge and motivation. Therefore, it can be claimed that perception is not defined as an assimilation of truth (Clark, 1999; Slavin 2015).

Perception process that takes place with our senses shows a very complicated development during the first years of life. There are studies and theories that advocate the view that the process of perception develops in a gradually complex way. The most well-known theory is the Gestalt approach (Zaporozhets, 1965). When the definition of Gestalt approach is considered by its verbal meaning, it refers to mental actions such as regulation and organizing; when it is considered as a noun, it refers to concepts such as shape, form, structure, picture are encountered (Sabar, 2013). Holistic approach was the prevailing view at the time people started to discuss about Gestalt (Clark, 1999; Han et al., 1999; Pinna, 2010; Rock & Palmer, 1990).

The pioneers of the Gestalt approach Wertheimer, Koffka and Köhler carried out studies on how the human perceives and what influences this perception process (Luccio, 2011; Wagemans et al., 2012). According to these psychologists, perception is giving meaning to what is perceived by eyes through grouping, simplifying and regulating by the brain automatically (Golombisky & Hagen, 2010). The Gestalt approach is a theory that attempts to understand how visual perception is occurred, the effective factors in the process of perception, and how these effective factors contribute (Luccio, 2011; Sabar, 2013; Soff, 2012; Wagemans et al., 2012).

It is an indisputable fact that interaction of all senses is essential for the full perception of the environment and the world. As 80 percent of the information we perceive is visual, it can be said that visual perception is the most effective one among other senses (Sarp, 2013). Preschool ages, which is the period of rapid development of all developmental areas, is the stage in which children acquire visual perception ability and this ability acquisition process accelerates between the ages of 3-7 (, Bangir-Alpan & Özbalcı, 2015; Turan, 2006; Yukay-Yuksel & Yurtsever-Kılıçgün; 2012).

The increase in the level of visual perception is important for the development of social skills. Eye contact, body language, facial expressions and gestures are non-verbal ways of communication and they are also visual clues for the child and through these clues, the child interprets the body language and gestures of the other person. In this way, the child initiates and maintains social relations with his friends (Kurtz, 2006).

Cognitive processes are also significantly influential in the realization of visual perception (Goodale & Milner, 1992; Luccio, 2011; Teleb et al., 2016). Thus, visual perception accelerating during childhood supports academic and motor skills which are necessary for school success (Brown & Gaboury, 2006; Dankert et al., 200;). At the same time, visual perception helps developing skills necessary for mathematics, literacy preparation and school success and which are acquired during preschool (Duru, 2008; Erdem, 2006; Harmankaya Maraşlı, 2010; Memiş & Harmankaya, 2012; Yukay-Yuksel & Yurtsever-Kılıçgün, 2012).

Inadequacies in the academic field can lead to problems in child's all areas of life, from school life to social life (Aral & Erturan, 1999). Researchers agree upon the idea that if children with perceptual and learning disorders are not diagnosed and treated at an early age, they will develop severe learning difficulties and related disorders in the future. This is also true for visual perception and what is essential in child's learning is the early detection of obstructive disorders rather than waiting for the visual perception to develop spontaneously (Marr et al., 2001; Turan, 2006; Yukay-Yuksel & Yurtsever-Kılıçgün, 2012). For this reason, it is important

to determine the visual perception level of the children who are attending to preschool education institutions and to provide necessary support for the children with deficiencies in this area.

In the visual perception studies prepared for pre-school children, the development and needs of children are taken into consideration. In the process of visual perception studies, worksheets for visual perception are prepared in order to maintain persistence and maintain continuity with visual perception education. These studies help children learn by trial and error (Beery & Beery, 2004; Koç, 2002;).

According to the literature considering visual perception there are studies investigating the relationship between; visual perception-reading rate (Memiş & Ayvaz Sivri, 2016), dynamic visual perceptions and reading skills of dyslexic children (Meng et al., 2011); supporting visual perception of children with learning disabilities (Mona et al., 2015), and comparing visual perception levels of students with mathematical learning disabilities and students with normal development (Pieters et al., 2012). In addition, there are also many studies testing the effectiveness of educational programs that improve visual perception skills in children (Cengiz, 2002; Dibek, 2010; Ercan & Aral, 2011; Kalkan, 2014; Kurtulmuş & Temel, 2013; Mona et al., 2015; Schonberg et al., 2014; Yıldırım et al., 2012; Yukay-Yuksel & Yurtsever-Kılıçgün, 2012; Teleb et al., 2016). The aim of these studies is to support the development of visual perception.

In contrast to the studies conducted on visual perception in preschool children in recent years, in this study it is aimed to examine visual perception levels of preschool children according to age, gender, duration of formal education and socio-economic level variables.

1.1. Aim of the study

The purpose of this study is to determine visual perception levels of preschool children and to identify the differences in the visual perception levels of preschool children according to their gender, age groups, duration of formal education and socio-economic level of the districts where the research was conducted. Within the scope of this research, the following questions are asked:

1. What are the visual perception levels of preschool children participating in the study?
2. Do the visual perception levels of preschool children differ according to gender?
3. Do the visual perception levels of preschool children differ according to age?
4. Do the visual perception levels of preschool children differ according to the duration of formal education?
5. Do the visual perception levels of preschool children differ according to the socio-economic level of their parents?

2. Methodology

2.1. Research model

The research was conducted through the relational survey model. The opinions or characteristics (beliefs, knowledge, attitude, skill, talent, etc.) of participants related to a topic or an event are examined in survey models (Büyüköztürk et al., 2016). General survey models consist of a survey process conducted on a population, consisting of many elements, or a sample of this population so as to make a general judgment about the population. Relational survey models within this group are used for research models aiming at determining the presence of covariance between two or more variables (Karasar, 2016). Since visual perception levels of preschool children attending preschool education institutions in Istanbul province are

aimed to be examined according to different variables, the relational survey model was used in this study.

2.2. Population

The population of the study consists of children aged between 5-6 attending preschools affiliated to the Ministry of National Education in the Kadıköy, Maltepe, Beşiktaş and Sarıyer districts within the Anatolian and European sides of İstanbul and which are considered as having a cosmopolitan structure with regards to socio-economic level.

2.3. Sample

The sample group of the research consisted of 114 children aged between 5-6 years attending kindergartens in the schools affiliated to the Ministry of National Education in Kadıköy, Maltepe, Beşiktaş and Sarıyer districts on Anatolian and European sides of Istanbul. High-middle and middle socio-economic levels were taken into consideration in the study. Beşiktaş-Kadıköy districts were considered to represent high-middle socio-economic level and Maltepe-Sarıyer districts were considered to represent middle socio-economic level. Two schools were selected from each district.

While the schools participating in the study group were chosen by random sampling method; in the selection of children in these schools, random sampling was applied by excluding the children with attention deficit and hyperactivity disorder and developmental disorder. In random sampling method, the probability of selection of all individuals is the same and the choice of an individual does not affect the choice of other individuals (Büyüköztürk et al., 2016). The random sampling method is stronger than other methods in providing representation, in this reason this method was used in the study. The demographic information of the children participating in the study group is given on table 1.

Table 1. *Distribution of children in the study group by gender, age, duration of education and socio-economic levels*

Variable	Group	N	%
Gender	Girl	57	50
	Boy	57	50
	Total	114	100
Age	66 Months and Below	46	40
	67 – 72 Months	64	56
	73 Months and Above	39	34
	Total	114	100
Duration of Education	0 - 1 Year	56	51
	1 - 2 Years	54	49
	Total	110	100
Districts	Kadıköy	28	25
	Maltepe	26	23
	Beşiktaş	30	26
	Sarıyer	30	26
	Total	114	100

2.4. Data collection instruments

In the study, "Personal Information Form" was used for collecting demographic data, including age, gender, the period of time spent by the child in formal education, and the district where the schools are located.

In order to determine the visual perception levels of preschool children, the "Visual Perception Scale for Preschool (VPSP)" developed by Kalkan and Arslan in 2015 was used. The Visual Perception Scale for Preschool that was developed by Kalkan and Arslan consists of 20 items. There are three factors. These are "discernment", "figure-background perception" and "matching". Each correct answer given to the scale is scored with "1", and each false answer is scored with "0". The highest score to be taken from the scale is "20", the lowest score is "0"

The reliability of the scale varies between .75 and .84 according to factors and in this study, it was observed to be between .55 and .89.

2.5. Data collection method

Information about the children was obtained from the classroom teachers through the "Personal Information Form". In addition, the "Visual Perception Scale for Preschool" (VPSP) was applied to children participating in the study by individual interviews done by the

researchers at the schools where each child was present. Every interview was conducted in a quiet environment outside the classroom, where the implementer of the scale and the child were seated face to face. Each child was given only one pencil. The scale was applied to cover a maximum of 10 minutes for each child.

2.6. Analysis and interpretation of data

Data collected by the "Personal Information Form" and the "Visual Perception Scale for Preschool" (VPSP) were analyzed through the SPSS program. Firstly, the Kolmogorov-Smirnov test was used to check whether or not the data showed normal distribution; it was observed that the data were not normally distributed ($p < .05$). For this reason, non-parametric tests were used. The Mann-Whitney U test was used to investigate whether or not visual perception levels of preschool children differed according to gender, duration of formal education, and socio-economic level (quality of life) of districts. In order to determine whether or not there was a difference in the visual perception levels of preschool children according to their ages, the "Kruskal-Wallis" analysis was applied.

3. Findings

The results of the statistical analysis, in accordance with the questions aroused in the study, are as follows:

Table 2. *Visual perception levels of pre-school children's according to mean and standard deviation rate*

Dimansions	N	\bar{X}	SD
Differentiation	114	11,20	2,12
Figure-ground perception	114	2,58	1,24
Matching	114	,42	,93
Total	114	14,21	2,62

As shown in Table 2, the average of pre-school children from differentiation the sub-dimension of the scale, 11,20; standard deviation 2,12; the average of pre-school children from figure-ground discrimination the sub-dimension of the scale 2,58; standard deviation 1,24; the average of pre-school children from matching the sub-dimension of the scale; ,42, standard deviation ,93 and mean score from the total of the scale is 14,21; standard deviation 2,62,

Table 3. *Mann-Whitney U test results: Showing visual perception levels of pre-school children according to gender*

Gender	N	Mean Rank	Rank Sum	U	z	p
Girl	57	61,43	3501,5	1400,0	-1,283	,200
Boy	57	53,57	3053,5			

It is evident on Table 3, visual perception levels of preschool children did not differ according to their gender ($U=1400,0$; $z=-1,283$; $p>,05$).

Table 4. *Kruskal Wallis one-way ANOVA results showing visual perception levels of pre-school children according to age*

Months	N	Mean Rank	Sd	X ²	p	Meaningful Difference
66 months and below	23	64,35				
67-72 months	52	52,68	2	2,344	,310	-
73 months and above	39	59,88				

It is evident on Table 4 that there is not a significant difference between visual perception levels of preschool children according to their age ($X^2(2)=2,344$, $p>,05$).

Table 5. *Mann-Whitney U test results showing visual perception levels of pre-school children according to duration of formal education*

Duration of Formal Education	N	Mean Rank	Rank Sum	U	Z	p
0-1 year	56	52,76	2954,5			
1-2 years	54	58,34	3150,5	1358,5	-,927	,354

As indicated in Table 5, there is not a significant difference between duration of formal education and visual perception levels of preschool children ($U=1358,5$; $p>,05$).

Table 6. Mann-Whitney U test results showing visual perception levels of pre-school children according to socio-economic levels of districts

Districts	N	Mean Rank	Rank Sum	U	Z	p
Beşiktaş-Kadıköy	57	65,07	3709,0	1193,0	-2,471	,013*
Maltepe-Sarıyer	57	49,93	2846,0			

* $p < ,05$

As shown in Table 6, visual perception levels of preschool children differed according to socio-economic levels of the districts where the study was conducted ($U=1193,0$; $p < ,05$).

4. Result and discussion

According to the results of the study examining visual perception levels of preschool aged children with respect to their gender, age, period they received formal education and socio-economic status of the district the study was conducted in;

1. In this study, visual perception levels of preschool aged children were observed to be slightly above average. In order to dwell on this finding, based on the fact that the variety of stimuli that children are exposed to shows development in the other senses of children, it can be assumed that the children participating in the study are exposed to sufficient number or more stimuli and this positively affects visual perceptions of these children. However, there are also studies underlining that children with low socio-economic level (poor) have a lack of stimulus (Şener & Ocağcı, 2014). Because the economic status of the districts the study was conducted in are at medium and high-medium level, the type of stimulus that the children living in these areas receive is affected by their economic status and this may have affected their visual perception levels.

2. Visual perception levels of preschool aged children do not differ according to their gender. That there was no difference in the study based on gender can be related to brain development and brain volume. It is assumed that brain development will be similar in male and female children up to a specific age and thus, so will their visual perception levels. However, according to a study there are small differences in brain volume with respect to children between ages 5-17 (Reiss et al., 1996). The result of this study is parallel with results of various other studies (Arı, 2007; Duru, 2008; Harmankaya, 2010; Memiş and Harmankaya, 2012). But these studies were conducted on primary school children. In addition, in the study where Değirmenci (2014) examined the relationship between visual perception levels and perceptive-taking skills of 48-60 months old children, a difference was found between visual perception and gender: Female children were observed to be more successful in visual perception development than male children. In the study conducted by Cheung et al. (2005) on primary school aged children, a difference on visual perception was observed with respect to gender. Thus, visual perception levels of female children were found to be higher than male children. Pittorf, Lehmann and Huckauf (2014) conducted a study and examined visual working memory and perceptual speeds of 3-6 year old children. It was observed that there is a difference between the visual working memories of male and female children. This difference was in favor of male children and visual working memories of males are at better level than females. In addition, it was found that there is a difference in visual information processing

speeds of female and male children and this difference is in favor of male children. Visual information processing speed of male children is higher than female children.

3. It was observed that visual perception levels of preschool aged children do not statistically differ according to their age. The reason for this may be because the ages of the children in the study group were close to each other. This result is similar with other studies. According to previous studies, visual perception levels of children of older age are higher than children of smaller age (Cheung et al., 2005; Değirmenci, 2014; Erdem, 2006). Öztoklu-Durmuş (2014) state that 49-60 months old children's visual perception scores are at expected level; and 61-70 months old children's visual perception states are below expected level. The reason why older age children have higher visual perception levels than smaller children can be due to the education they receive. When previous studies (Cheung et al., 2005; Değirmenci, 2014; Erdem, 2006) are considered, it is evident that the children are at primary school level or an educational program supporting visual perception is carried out on children. Difference in gender may not have been observed in this study because it approached early childhood period and because visual perception is not fully developed in this period. Although visual perception is matured during primary school; it may not have a development area to mature on its own during early childhood. However, Arıkök (2001) states that children who recently begin primary school are not mature enough to solve problems related to visual perception.

4. No statistical and significant difference was observed between visual perception levels of preschool aged children and the period of time they received formal education. Visual perception activities (hand-eye coordination, figure-ground discrimination, figure consistency, position in space, spatial relations, speed etc.) are included in the preparation activities for reading and writing in the Preschool Education Program; acquisitions and indicators concerning visual perception are also underlined in the program (MEB, 2013). That there was no difference in children who participated in the program and received education for two years can be due to the fact that the program is not as effective as it is expected or is not carried out efficiently. Whereas, visual perception skills should be supported by conducting appropriate education programs rather than expecting them to develop on their own during the preschool period (Görener, 2006).

5. It was observed that there is a significant difference in favor of high-medium socio-economic level between visual perception levels of preschool aged children and socio-economic status (high-medium, (medium) of the district the study was conducted in. Socio-economic status is a part of life quality; thus life quality may have led to this difference. People who live in places with high life quality benefit from education, health and social setting opportunities at a higher rate (Şeker, 2015). Life quality is constructed by many factors. These are listed as; benefiting from health and education services, sufficient nutrition and protection, a healthy environment, rights, opportunity and gender equality, participating in daily life, reputation and security. Lack of any of these factors negatively affects a life of good quality (Şeker, 2011). Thus, children living in a high-medium socio-economic level environment may have benefitted more from educational opportunities and this education may have affected their visual perception levels. Families with high-medium socio-economic level may have offered their children more visual stimuli and provided them settings rich in visual stimuli. In their study Pittorf, Lehmann and Huckauf (2014) found that being exposed to a visually presented object for a long time facilitates remembering and observed that visual working memory depends highly on perceptual speed. For this reason, visual perception levels of children with high-medium socio-economic level may be high because they are exposed to objects for long periods of time.

In light of the research results, following suggestions are presented:

Suggestions for researchers

When the studies on the visual perceptions of preschool children are examined, it is observed that there are studies (Cheung et al., 2005; Değirmenci 2014; Pittorf, Lehmann & Huckauf 2013) in which visual perception levels of children vary in accordance with the gender variable. Nevertheless, there are studies (Ari, 2007; Duru, 2008; Harmankaya, 2010; Memiş & Harmankaya, 2012) in which visual perception levels of children do not differ according to gender variable. As current results are differing on gender variable, further researches examining the relation between visual perception levels and gender can be done.

In this research, the birth months of children are close to each other is seen as a limitation. Thus it can be recommended that similar studies with different age groups can be applied.

It is seen as a limitation that this study is conducted with children of upper-middle and middle socio-economic status. In addition, it is not seen in current literature investigating the relationship between visual perception levels of children and their socioeconomic status. Therefore, further researches can be done to identify the relationship between visual perception levels of children and their socio-economic status. In the light of these findings, developmentally appropriate programs can be prepared to enhance the level of visual perceptions of children.

In this research, children from public preschools are included. Further researches can be applied to compare the levels of visual perception of children from both public and private preschools.

Suggestions for organizations and institutions

In this research, the levels of visual perceptions of children were found above the average. Based on this evidence, the following recommendations can be presented:

The levels of visual perceptions of children were not found significantly different by the time period children receive formal preschool education. The reason of this result is interpreted as teachers' failure in implementing the program effectively. For this reason, in-service educations for teachers on methods to study visual perception can be done.

Diversity in visual perception studies in preschools can be achieved. By supporting these studies, the quantity and content of studies can be enhanced.

Suggestions for teachers

Based on the evidence that the ratio of the people living in places with high quality of life benefit from educational, health and social services and the visual perception scores of children living in these districts is above the average, it can be recommended that teachers give more importance to the applications in their programs which improve the visual perception and prepare more visually stimulating environments for children.

ENDNOTE

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“TEACHING GRAMMAR IS NOT MY MAIN RESPONSIBILITY”: EXPLORING EFL TEACHERS’ BELIEFS ABOUT GRAMMAR TEACHING

Research Article

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Abstract

This mixed-methods study investigated a hundred university EFL teachers’ beliefs about several issues in grammar teaching. Teachers’ beliefs about these issues such as the explicit and implicit teaching of grammar, its integration with other language skills, and the role of a teacher in grammar teaching were elicited by means of a questionnaire. Furthermore, semi-structured interviews were conducted with ten volunteer teachers to obtain more in-depth information about teachers’ reported beliefs. These results were analyzed by using the descriptive statistics and in-vivo coding. The findings of the study demonstrated that most teachers believed in the centrality of grammar instruction to helping language learners attain a substantial proficiency in English. Moreover, it was found that most teachers favored an inductive, integrative and communicative approach to grammar teaching. Although teachers’ reported beliefs were, overall, in harmony with the literature on grammar teaching, there were no hints suggesting that teachers were aware of grammar theories or their beliefs were based on SLA/grammar literature. The findings indicated that the distinction between pedagogical dichotomies proposed in the literature seemed to blur in the practice since teachers frequently referred to personal and contextual features as the main factors shaping their beliefs and practices.

Keywords: grammar teaching, language teacher cognition, language teacher beliefs

1. Introduction

Teacher cognition can be defined as an intricate web of knowledge, beliefs, and values which may exert a drastic impact on teachers' thinking and behaviors (Borg, 2003; Borg & Burns, 2008; Calderhead, 1996; Richardson, 1996). A core part of the teacher cognition is beliefs that are assumed to be idiosyncratic in nature and stored as episodic memories (Nespor, 1987). Beliefs include evaluative and affective features that may function as filters. These filters can be activated when new information received is not compatible with the existing belief system (Pajares, 1992; Sakui & Gaies, 2003). Since the 1970s, teacher beliefs have been scrutinized in a plethora of studies that have been conducted to understand what teachers know, think, believe, and how these impact what teachers do in operational teaching settings (Zheng, 2013). This growing body of literature has demonstrated that teacher beliefs affect teachers’ instructional choices and practices to a considerable degree (Burns, 1992, 1996; Farrell & Kun, 2007; Kagan, 1992; Sang, Valcke, van Braak, & Tondeur, 2010; Smith, 1996; Woods, 1996). Particularly, investigating language teachers’ beliefs about grammar teaching has been a lively research agenda over the last two decades (Bell, 2016; Graus & Coppen, 2016; Phipps & Borg, 2009; Underwood, 2012; Sanchez & Borg, 2014; Valeo & Spada, 2016; Watson, 2015a, 2015b) due to the centrality of grammar instruction to language proficiency (Nassaji & Fotos, 2004)

and the equivocal nature of SLA studies that explore the best ways of teaching grammar (Borg, 1998, 2006).

Previous research on language teachers' beliefs about grammar instruction has demonstrated that teachers' practices were practical and experiential rather than being based on SLA theories (Borg, 2003; Borg & Burns, 2008; Eisentein-Ebsworth & Schweers, 1997; Watson 2005b). Furthermore, relevant literature has also demonstrated that (i) psychological, contextual and experiential factors may impact teachers' theories in grammar teaching (Borg, 1999a, 1999b; Farrell, 1999; Sanchez & Borg, 2014; Valeo & Spada, 2016; Watson, 2015a), (ii) teachers' reported beliefs and practices are, overall, in harmony (Phipps & Borg, 2009) and (iii) teachers favor formal instruction of grammar which fosters the presentation and practice of grammar (Borg & Burns, 2008; Burgess & Etherington, 2002, Phipps & Borg, 2009; Graus & Coppen, 2016). Research on language teachers' beliefs about grammar instruction has largely focused on English language teachers' beliefs mainly in contexts such as the United States, the United Kingdom, Singapore and Malta, where English is the official language. Thus, more research efforts may prove useful in EFL contexts where (i) English is learnt as a foreign language and mostly treated as a school subject, (ii) opportunities for using English for authentic purposes are relatively scarce, and (iii) attaining proficiency in English serve may serve gate-keeping purposes. In such contexts, grammar instruction may constitute a fundamental component of language teaching practices. As such, understanding the structure of the foreign/second language teachers' beliefs about grammar grows enormously in significance for teachers' actions tend to be in accordance with their beliefs (Farrell & Kun, 2007) and there is no indication that grammar teaching is becoming less important while there is continuing evidence that teachers promote grammar work (Borg, 2003).

1.1. The present study

Although EFL teachers may be presented with a substantial body of information about grammar teaching theories and methods in teacher education programs, they may resort to their own maps while making their journeys along this wild and vast territory (Kagan, 1992). In a sense, these maps could be viewed as EFL teachers' beliefs that are the products of their mental lives, educational and professional biographies, and institutional and social factors. Previously, Phipps and Borg (2009) examined the tensions in the grammar teaching beliefs and practices of three university teachers of English working in Turkey through a qualitative design which employed observation and interviews. The study revealed that teachers' beliefs and practices were overall in harmony and teachers adopted a focus-on forms approach to grammar which involves presentation and practice of grammar. Since the majority of studies on teachers' grammar beliefs were conducted in non-EFL settings, studies conducting in EFL settings may offer useful insights, assuming that grammar teaching remains to be an indispensable part of language teaching practices in many EFL settings. Hence, the present study sets out to contribute to the growing body of literature on EFL teachers' cognition by examining a hundred university teachers' beliefs about grammar teaching in Turkey, an EFL setting. Specifically, the present study aimed to understand whether EFL university teachers (henceforth, teachers) believed:

- (i) in the effectiveness of explicit vs. implicit and inductive vs. deductive grammar teaching;
- (ii) the position of grammar in instructional sequences makes a difference;
- (iii) teachers' main responsibility in grammar teaching is presenting the rules;
- (iv) practice is crucial for the effectiveness of grammar teaching;
- (v) there are differences between young learners and adults in terms of grammar learning;

- (vi) teaching terminology is essential to grammar teaching and
- (vii) grammar needs to be taught integrated with other skills.

It is hoped that the present study not only contributes to the body of literature on language teacher cognition but also sheds lights on language teachers' beliefs about grammar teaching and factors underlying these beliefs in an EFL context.

2. Methodology

This section gives basic information about the design, participants, and tools of the study.

2.1. Design

The study utilized a descriptive and interpretative design and a mixed-methods approach. At the descriptive level, it aimed to understand the beliefs that teachers held about grammar teaching by using a questionnaire. At the interpretative level, it sought to gather more in-depth insights into teachers' beliefs and understand the personal, social, and institutional factors that might underlie these beliefs by using semi-structured interviews.

2.2. Participants

A hundred university teachers who were teaching English at preparatory language schools of several large and mid-sized universities in Turkey participated in the study. 79 of the teachers were female while 21 of them were male. 37 teachers had less than four-year experience in teaching English, while 35 teachers had five to ten years of experience. On the other hand, 24 teachers were more experienced in teaching English (11-15 years) and four teachers had more than 15 years of experience in teaching English. While 77 teachers were graduates of ELT departments, 23 of them attended English Literature, Linguistics, and Translation Studies departments during their undergraduate education.

The present study adopted snowball sampling (a.k.a. network or chain sampling) (Wiersma, 2000) technique in which participants help reach out to more participants working in the same institution. The preparatory language schools in which the participants worked offer English programs at different language proficiency levels to enhance undergraduates' competence in general English (Kırkgöz, 2007). Learning objectives across these levels are evaluated by in-house tests, and teachers are required to teach in line with these objectives. Information about teachers' experience in teaching English and their graduation background is provided in Table 1 and Table 2.

Table 1. *Years of experience in teaching*

Years of experience	0-4	5-10	11-15	15+
N of teachers	37	35	24	4

Table 2. *Teachers' graduation background*

Graduation	ELT	Other*
N of teachers	77	23

Note: *(English Literature, Linguistics, and Translation Studies)

As Table 2 reveals, 77% of the teachers held a bachelor degree in ELT (77%). Therefore, it was assumed that the majority of teachers were knowledgeable about SLA/grammar theories and research.

2.3. Data collection and analysis

A Likert questionnaire adopted from Borg and Burns (2008) was used to collect the quantitative data. This questionnaire was chosen since it is comprehensive in scope and covering a number of significant issues pertaining to grammar teaching. The questionnaire included 15 items, and these items covered a range of crucial issues in grammar teaching; such as the role of explicit teaching, the position of grammar in instructional sequences, the role of the teacher, the importance of practice, deductive and inductive learning, differences between teaching grammar to adult and young learners and the integration of grammar with other skills. The questionnaire elicited the teachers' responses on a five-point scale (from strongly disagree to strongly agree). These items and descriptive statistics about the participants' responses are given in Table 3.

Moreover, semi-structured interviews were conducted with ten volunteer teachers to achieve a deeper understanding of their beliefs and obtain more information about the issues investigated through the questionnaire. Eight teachers were interviewed face-to-face, while two were contacted via telephone. Interview questions were an elaborated version of the questionnaire items and aimed to infer the reasons underlying teachers' responses on the questionnaire. During the interviews, which lasted around ten minutes, the researcher took notes. While the questionnaire data were analyzed quantitatively by using descriptive statistics, qualitative data gathered through interviews were analyzed using in-vivo coding.

3. Results and discussions

This section reports on the results obtained through questionnaire and semi-structured interviews.

3.1. Overall results

Below, Table 3 lists the questionnaire items and teachers' responses in percentages. Items 1 and 2 elicited teachers' beliefs about explicit and implicit grammar teaching. Items 4 and 13 addressed teachers' beliefs about the distinction between teaching grammar to adults and young learners. Item 7 investigated teachers' beliefs about grammar instruction and Communicative Language Teaching (CLT). Item 12 addressed teachers' beliefs about deductive and inductive grammar teaching. Item 10 elicited teachers' beliefs about the use of terminology in grammar instruction. Item 5 investigated teachers' beliefs about how to position grammar while sequencing activities. Items 9 and 11 investigated teachers' beliefs about the role of teachers in grammar instruction. Items 3 and 8 addressed teachers' beliefs about the significance of practice in grammar teaching. Finally, Item 6 elicited teachers' beliefs about the integration of grammar with other language skills.

Table 3. Percentages of responses for each item

Items	SD	D	NI	A	SA
1. Teachers should present grammar to learners before expecting them to use it.	6%	25%	10%	40%	19%
2. Learners who are aware of grammar rules can use the language more effectively than those who are not.	3%	25%	8%	51%	13%
3. Exercises that get learners to practice grammar structures help learners develop fluency in using grammar.	0%	18%	16%	50%	16%
4. Teaching the rules of English grammar directly is more appropriate for older learners.	4%	27%	21%	35%	13%
5. During lessons, a focus on grammar should come after communicative tasks, not before.	7%	27%	14%	34%	18%
6. Grammar should be taught separately, not integrated with other skills such as reading and writing.	48%	40%	4%	6%	2%
7. In a communicative approach to language teaching grammar is not taught directly.	1%	9%	18%	46%	26%
8. In learning grammar, repeated practice allows learners to use structures fluently.	1%	12%	11%	54%	22%
9. In teaching grammar, a teacher's main role is to explain the rules.	27%	49%	11%	10%	2%
10. It is important for learners to know grammatical terminology.	20%	38%	17%	20%	5%
11. Correcting learners' spoken grammatical errors in English is one of the teacher's key roles.	21%	46%	14%	17%	2%
12. Grammar learning is more effective when learners work out the rules for themselves.	1%	15%	18%	42%	24%
13. Indirect grammar teaching is more appropriate with younger than with older learners.	3%	12%	15%	45%	25%
14. Formal grammar teaching does not help learners become more fluent.	0%	21%	16%	49%	14%
15. It is necessary to study the grammar of a second or foreign language in order to speak it fluently.	6%	27%	15%	45%	7%

To better detect the overall direction of teachers' answers, the results were collapsed into two categories for each item—"agree" comprised of agree and strongly agree and "disagree" comprised of disagree and strongly disagree. Figure 1 below shows these combined results.

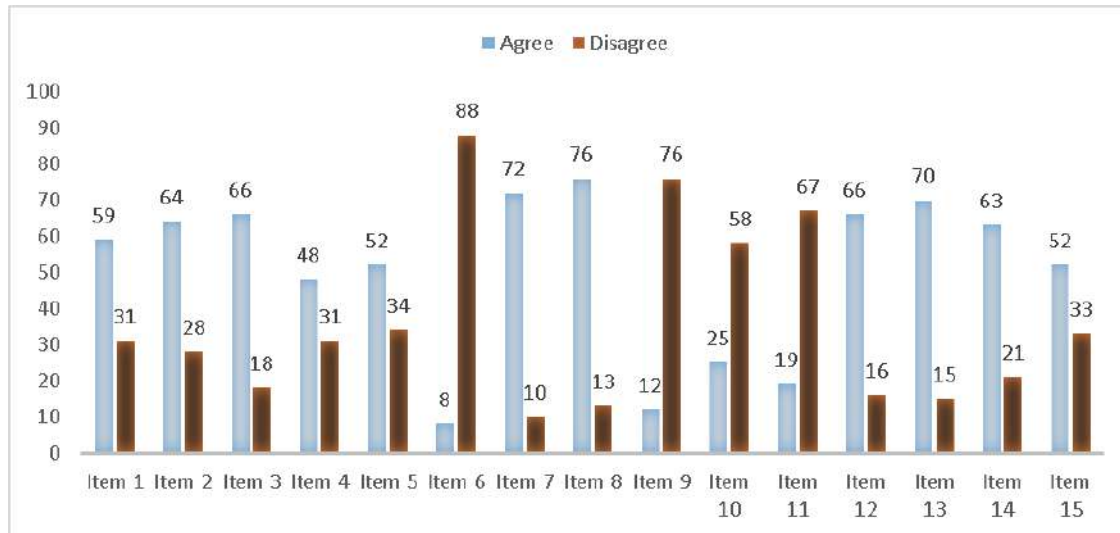


Figure 1. Responses given to questionnaire items

3.2. Explicit and implicit grammar teaching

Explicit knowledge is held consciously, learned, and retrieved via controlled processing when language learners come across with linguistic difficulties while using the target language (Ellis, 2006). On the contrary, implicit knowledge is procedural and is held unconsciously. Several scholars propose that explicit teaching of grammar is not relevant to language acquisition, and even if it is conducted, the effect of grammar teaching would be peripheral (Krashen, 1981; Sheen & O'Neill, 2005). The main issue regarding explicit/implicit teaching dichotomy is whether to teach explicit rules directly or to develop activities that enable learners to discover the rules for themselves (Ellis, 1998).

The results revealed that more than half of the teachers gave an opinion in favor of explicit grammar teaching (19% strongly agree, 40% agree). This belief was also reflected in the approval rate on Item 2 which suggested that being aware of grammar rules would offer language learners an advantage (13% strongly agree, 51% agree). The disposition towards explicit grammar teaching and rule learning is a common theme in grammar research. For instance, Jean and Simard (2011) stated that both teachers and learners found rule learning as important while Scheffler (2012) maintained that explicit attention to grammatical form can contribute to spontaneous production as well. Similarly, in our particular case, Teacher 4 stressed the impact of students' expectations on the amount of grammar work they carry out and stated:

Though I really don't like teaching grammar explicitly and try to avoid doing so, my students make me do it. From time to time, I catch them looking at me with empty eyes and they seem bored. When I start explaining the things explicitly, and by contrasting the rules with Turkish, they appraise my efforts and want me to do this all the time. They say "Teacher, we understand that way better, why don't you just explain the rules in detail rather than hitting the bush around?"

Another participant, Teacher 5, based her actions on her experiences as a language teacher and learner. She stated that:

I prefer doing explicit grammar teaching and explaining every bit in detail when we deal with structures that I believe are harder for learners to acquire. Deciding which ones are harder and which ones are relatively easy is a matter of experience and

knowledge, both as a teacher and language learner. For example, most students find it difficult to understand present perfect tense in English. In such cases, I provide direct and explicit explanations.

These comments provided by Teachers 4 and 5 hint that teachers reported beliefs about grammar teaching and practices in the classroom could be shaped, to a considerable extent, by contextual factors and teachers' teaching and learning background.

3.3. Teaching grammar to young learners and adults

Teachers were asked to report their beliefs about the distinction between teaching grammar to adult and young learners. On Item 4, 48% of the teachers embraced the idea that direct grammar instruction suits adult learners better, while 31% disfavored it. On Item 13, which suggested that indirect grammar instruction suits young learners better when compared to adult learners, the tendency towards using indirect grammar teaching with young learners seemed more strong and evident. On that item, 70% of the teachers agreed, and 15% of them disagreed with the statement. Overall, these results suggest that most teachers believed that direct grammar teaching suits adult learners better while indirect grammar teaching may be beneficial for younger learners. To illustrate, Teacher 3 stated:

Now as a teacher, I am teaching only adults. In the past, I taught at a primary school. Based on my experience, I can tell you the difference. Young learners, especially very young learners absolutely don't seem to benefit from direct grammar teaching. I have a young kid myself, and I teach him English. I don't attempt to explain anything to him because this would be useless. We just study vocabulary and pronunciation. Even if I explain grammar rules in the best simple way, I don't think he would understand.

Remarks made by Teacher 3 suggest that teaching experiences he had in his professional and daily life made him think that there are distinctions between young and adult learners and these distinctions may impact the way both groups learn languages better. Although Teacher 3 did not refer to any SLA/grammar theories and research while concluding this distinction, the relevant literature supports his beliefs about the difference between adult and young learners regarding grammar teaching. For instance, Krashen (1981) argues that the difference between adult and child learning stems from the period which is called Piaget's formal operations stage, and proposes that the ability to use grammar consciously calls for a meta-awareness of language that emerges during formal operations stage. When learning process includes formal instruction, adults may perform better in all areas, even in pronunciation (Luque Agullo, 2006). While adults need high verbal and analytical abilities to reach high levels of proficiency (Hyltenstam & Abrahamsson, 2003), on the other hand, child language learning can be defined as to be implicit, automatic, and domain-specific (Doughty, 2003).

3.4. Grammar instruction and communicative language teaching

Item 7 elicited teachers' beliefs about the Communicative Language Teaching (CLT) and direct grammar teaching. The majority of the teachers (72%) believed that grammar is not taught directly in CLT. Item 7 did not state that grammar teaching was not regarded as important in CLT or teachers did not apply CLT but indicated that direct grammar instruction is not practiced. Under CLT, grammatical competence is not limited to sentence-level morphosyntactic features; includes broader elements of discourse, sociolinguistic rules of appropriacy, and communication strategies, and receives attention in line with the communicative needs of learners (Canale & Swain, 1980; Savignon, 1991). When asked about to elaborate on her ideas about CLT and grammar teaching, Teacher 6 remarked:

There is a wrong assumption that grammar teaching is not practiced if you opt for a communicative approach. I believe the opposite. We need grammar to communicate

our ideas and needs more appropriately. We need to teach and learn grammar. I try to implement the communicative approach in my classes, and I dedicate time and effort to grammar as well. But I don't teach grammar directly, and this does not mean I don't teach it at all. I carry out activities that help learners to understand the rules themselves.

3.5. Teaching grammar inductively and deductively

The issue of teaching grammar inductively or deductively was investigated by Item 12. In deductive teaching, a grammatical structure is presented initially and then practiced in one way or another, constituting the first P in the Present-Practice-Produce sequence (Ellis, 2006). In inductive teaching, on the other hand, learners are first exposed to examples of the grammatical structures and are asked to arrive at a generalization on their own; there may or may not be a final explicit statement of the rule. The majority of the participants seemed to believe that grammar learning is more beneficial when learners deduce the rules on their own (24% strongly agree, 42% agree). On this issue, Teacher 6 stated that:

I prefer showing grammar in context, in action, in authentic reading passages for instance. This way, I can ask students why the author uses a particular structure, which is, in this case, the structure that I want to draw their attention to. Then, I wait for them to discover the rule for themselves.

However, on specific occasions, the teachers may resort to explaining rules, as indicated by Teachers 2 and 3 respectively:

If I feel that it won't take a lot of time for my students to discover the rules, I go for an inductive approach. If I feel that they will have difficulty in the discovery and we will spend precious lesson time, I explain the grammar rules to save time. (Teacher 2)

I rarely explain grammar to my students. I am more in favor of an inductive approach. There are certain times when I realize that my students need explanation. So, I make explanations in those rare times. (Teacher 3)

These results indicated that although teachers believed that it would be more efficient if students inferred the rules themselves, in actuality, they sometimes resorted to the deductive teaching of grammar. On some occasions, teachers may have to resort to the deductive teaching of grammar to meet the expectations of students. For instance, Vogel, Herron, Cole and York (2011) demonstrated that language learners prefer the deductive approach in which they are presented the rules. Also, pedagogical dichotomies (e.g. inductive vs. deductive grammar teaching) proposed in the relevant literature may become blurred to save "precious lesson time" or make sure that learners do not struggle in understanding grammatical structures. Borg (1999a) also suggests that the distinction between these pedagogical dichotomies seems to blur in the practice since teachers may make decisions based on contextual factors. In our particular context, each preparatory language school has its curriculum which specifies the course objectives, topics to be covered and exams that need to be taken in detail, and consequently, each teacher working in these schools needs to stick to the plan. Therefore, teachers' resorting to the deductive teaching of grammar due to contextual factors would be understandable.

3.6. Teaching grammar terminology

Borg (1999c) suggests that if students possess substantial knowledge of grammatical terminology, this knowledge can provide an economic and shared means of communication about language. Furthermore, the knowledge of terminology can facilitate diagnostic work, help learners to function more competently, and increase learner autonomy. Although relevant literature proposes that metalinguistic background and maturation exert an impact on grammar terminology use (Stern, 1992) and adult learners may benefit more from the use of terminology

(Ur, 1996) when compared to young learners, only a quarter of the teachers (25%) agreed with Item 10. The remaining 75% disagreed with the idea, and this disagreement was also reflected in their responses during interviews. Eight interviewees out of 10 advocated that the use of terminology was useless in language classes. The interviews revealed that the main reason for this reaction had something to do with the belief that there are far more crucial things to teach about grammar than its terminology. For instance, Teachers 4 and 8 remarked respectively:

I sometimes teach grammatical terminology if I feel that they will not be confused. I am not in favor of using terminology a lot. This is not what the students need primarily. (Teacher 4)

Students don't need to learn about the terminology of grammar. It would be better for them to know the use of grammatical structures. (Teacher 8)

On the other hand, Teacher 1 advocated the use of terminology to an optimal extent while stating:

I don't promote my students to learn grammatical terminology except some basic ones like the subject, object and possessive pronouns or verb, adjective. I want them to learn these basic ones; this would be feasible. When I say fast is both an adjective and an adverb, they would easily understand what I mean.

The explanation provided by Teacher 1 may hold true for teachers who practice grammar teaching in their classes but also avoid using grammar terminology as much as they could or rely on more common and basic terms such as “tense”, “adjective” and “preposition”.

3.7. The position of grammar in instructional sequences

Item 5 elicited teachers' beliefs about the position of grammar in instructional sequences. More than half of the teachers rendered an opinion in favor of a focus on the grammar after the communicative tasks, while 34% of the teachers believed that grammar should receive attention before the tasks are given. This situation may indicate a tendency towards inductive teaching of grammar among teachers, in which students are initially exposed to grammatical structures and try to infer underlying rules themselves. One of the teachers who did not agree with a focus on grammar before completing a task and chose to deal with it in the remaining parts of the lesson was Teacher 7 who remarked:

Firstly, I implement activities that have a hidden grammatical focus. Then, I focus on grammar. I go for communicative activities in my lessons, and after we finish these activities, we focus on grammatical points. This way, students also have the chance to reflect on grammar rules and understand these rules better.

On the other hand, the teachers who gave a strong opinion about focusing on grammar before communicative tasks might believe that students should master grammatical rules first and then use these rules while they are working on the following communicative tasks. These participants might also think that knowledge of grammar has a liberating force that equips learners with necessary mental faculties needed to work on these tasks. The issue of positioning grammar in instructional sequences was dealt with in a comprehensive meta-analysis study conducted by Shintani, Li and Ellis (2013) who concluded that a combination of grammar presentation/input processing and production activities may be most effective. Rather than applying a strict sequencing, different tasks can be employed to provide students with input by listening or reading or to exploit grammar productively in speaking or writing.

During interviews, the participants provided different answers on the issue of sequencing. Teacher 5 treated the subject as a matter of sequencing grammatical activities among themselves as he stated:

I sequence grammar teaching activities from the simple to complex, from familiar to unfamiliar, from individual to collaborative or from the guided to free ones.

However, Teacher 4 acknowledged that she did not devote any attention to sequencing grammar activities that she used and remarked:

I do not sequence activities on my own. I follow the course book to this aim.

3.8. The role of teacher in grammar teaching

Items 9 and 11 elicited teachers' beliefs about the role of a teacher in teaching grammar. 76% of the teachers believed that explaining grammar rules is not the main duty of a teacher. Only 12% of them agreed that this was teachers' primary responsibility. Traditionally, teachers are regarded as input providers and knowledge transmitters in grammar teaching (Luque Agullo, 2006). However, the majority of the teachers opted for a facilitator or elicitor role rather than a presenter role. This tendency was reflected in the interviews conducted, as put forward by Teachers 8 and 10:

I don't explain grammar points at all; I help my students discover them. (Teacher 8)

I don't explain grammar in detail. I have more important things to do in my classes. So, I let the students see grammar in context, especially in reading passages. (Teacher 10)

On the contrary, there were also several teachers who explicitly stated that they had to act as presenter of grammar, if not all the time, but to a substantial extent due to contextual factors such as students' demands, curriculum, textbooks, and exams. These factors were identified in the statements of Teachers 1, 5 and 9 when they stated:

I don't want to spend much time on teaching grammar, but I have to do so at least to some extent because the curriculum and course books urge me to do so. (Teacher 1)

I teach grammar for almost 10-15 minutes in a course hour, which is 45 minutes. If it were up to me, I wouldn't dedicate that much time to teaching merely grammar, but students want me to do so. (Teacher 5)

The level of students is important. I teach beginners. They don't know much about the language, feel intimidated and expect explanations about grammar from me. I explain grammatical structures, and these explanations are mostly in the mother tongue, Turkish. (Teacher 9)

Item 11 elicited teachers' beliefs about whether correcting learners' grammatical errors in speaking was one of the teacher's key responsibilities or not. Only 19% of the participants agreed that correcting spoken grammar mistakes is one of the roles of the teachers, while 67% of them favored the opposite. This opposition may derive from the belief that during the activities where the focus is fluency, errors related to accuracy should not be corrected. It may also be a reflection of the idea that error correction does not work. However, Borg (1999b) suggests that grammar work that focuses on students' errors in fluency activities legitimize these activities and encourages reluctant students to welcome such activities more willingly. The interviews revealed that the teachers handled the job of error correction with a critical eye. To illustrate, Teachers 1 and 7, when asked about how they deal with error correction, made the following comment:

In accuracy work, I provide immediate feedback, however in fluency work, I never interrupt the students. I never give them the correct form. I ask questions about the problematic part, or I draw their attention to it, for instance, I use a rising intonation or questioning voice. (Teacher 1)

If my students are beginners, I immediately correct their mistakes to prevent errors from sticking up. During the fluency work, I correct their mistakes after they finish their speech. I draw their attention to the problem by asking a question, repeating the error or providing both the correct and incorrect form. So, they stop and think about it. (Teacher 7)

The same attitude was observed with most of the teachers interviewed. They claimed that they made a distinction between accuracy and fluency work while handling an error. Put differently; they stated that they did not interfere with the students during speaking activities but provided immediate feedback on errors that were made during writing activities. One interesting solution was proposed by Teacher 5 who stated:

Both in fluency and accuracy work, I don't correct the students immediately. I summarize the errors of the students in a table and go through the table with them. I think when we do so, the students become much more aware of their errors, and this systematic analysis may lead to self-monitoring in later phases.

3.9. The Importance of practice in grammar teaching

The analysis revealed that 66% of the teachers believed that exercises that help students practice grammar would enhance learners' fluency in using grammar while 18% of the teachers believed the opposite. The concept of fluency used mentioned on Item 3 refers to the ability to use grammar smoothly and easily –not only in the context of speaking but also in the context of writing. There was some evidence suggesting that grammar practice was seen to be useful. A similar belief was presented on Item 8, which stated that repeated practice allows learners to use grammatical structures fluently. While 76% of the teachers agreed with the statement, only 13% of them showed disagreement. Thus, it could be concluded that majority of the teachers believed in the effectiveness of practice in developing the fluency in using grammar.

Practice in grammar teaching may provide several benefits. For instance, even pattern practices that lack meaning may provide some input for creative language construction. Moreover, such practice could also create room for rule learning, either as a context for deducing the rules or as a setting to apply the rules and obtain feedback (Krashen, 1981). Teachers may assume that activities that help practice newly learned grammar structures besides rendering a chance of reinforcement, may also give teachers and learners the opportunity to see if they are doing fine. Additionally, grammar practice may consolidate students' understanding of grammar and provide teachers with diagnostic information about students' needs (Borg, 1999b). Practice, in that sense, would act as a source of feedback. Teachers 2 and 9, for instance, made the following comments on the issue of practice:

During the practice part of the lessons I give learners some tasks to see whether they have understood grammar and during the writing tasks, I check their writings and give them immediate feedback. I do that in productions tasks, especially in writing. Because I don't want to interrupt them in speaking, and their mistakes become much more obvious and understandable in written format. So, we can work on them. (Teacher 2)

I check whether students have learned grammatical features or not through the practices we make in class or homework. I think practice is really helpful because it shows if we

need any further grammar work or points to the weaknesses or gaps that need to be dealt with. (Teacher 9)

As can be understood from these comments, a repeated practice was regarded as a way to recycle language forms and obtain diagnostic feedback. When students work on tasks that are created to link form, meaning and function, they could enhance their understanding of grammar. They may get the chance to progressively structure and restructure the language using inductive learning, which helps them to grasp how grammar works in context (Nunan, 1998).

3.10. Integrating grammar with other skills

Item 6 addressed the issue of integrating grammar with four skills. 88% of the teachers gave strong beliefs to the notion of embeddedness and objected to the idea that grammar should be dealt with isolation. Only 8% of the participants agreed with the idea that grammar should be taught separately. For instance, Teachers 6 and 10 made the following comment on the integration of grammar with other skills:

I just don't explain the grammatical rules to my students directly. I want them to see the grammatical structures in reading passages. Then, I try to elicit these rules. After practicing the grammatical structures, I want them to use these structures in writing and speaking tasks. In production tasks, we can understand whether they really have understood the structures and use them for communicative purposes. Besides, I believe that studying grammar in integration with other skills like reading, writing, and speaking is more meaningful than focusing on only mechanical exercises. (Teacher 6)

Especially reading activities provide a meaningful context for studying grammatical features. On the other hand, speaking and writing activities enable me, as a teacher, to see if my students have successfully acquired these features or not. If yes, we can move forward and recycle these features later, if not we can devote some more time to the teaching and practice of grammar. (Teacher 10)

It can be concluded that activities that directly target language skills such as reading and writing were regarded by teachers as a meaningful context for working on grammar. The significance of grammar to fluency was also dealt with through Items 14 and 15. On Item 14, 63% of the teachers agreed with the idea that direct grammar teaching does not promote fluency while 21% of them agreed with the idea. On Item 15, which suggested that studying grammar is essential for speaking a language fluently, 52% of the teachers agreed, 33% of them disagreed with the statement. Thus, it is safe to posit that the participants gave contradictory responses about the "liberating force of the grammar" as Widdowson (1990) puts it. While more than half of the teachers reported their belief in the necessity of studying grammar to speak a language fluently, 63% of the teachers believed that formal grammar instruction did not foster fluency.

4. Conclusions and implications

The present study aimed to explore EFL university teachers' beliefs about grammar teaching regarding several issues such as deductive/inductive and explicit/implicit teaching of grammar, the role of a teacher in teaching grammar, sequencing grammar activities and integrating grammar teaching with other skills. Overall, findings obtained through the questionnaire demonstrated that most of the teachers believed that knowledge of grammar was central to a substantial level of proficiency in language and learners who possess the knowledge of grammar can use the target language more effectively when compared to those who lack it. On the other hand, the results revealed that teachers seemed to believe that learners would benefit

more from an inductive approach to grammar teaching in which learners try to work out the rules themselves. Teachers also made a distinction between teaching grammar to young and adult learners regarding the benefit they could obtain from formal grammar instruction, especially embracing the idea that young learners benefit more from the indirect teaching of grammar. Teachers regarded grammar practice as beneficial to increasing fluency in using grammar, yet they did not support the idea of teaching terminology to a great extent. Another issue that was presented to the evaluation of teachers was about the role of a teacher in grammar teaching. Majority of the teachers refused the idea that it is teachers' main responsibility to explain the grammar rules and correct grammatical mistakes that students make during speaking tasks. When it comes to practical considerations including the sequencing of activities and integration of grammar with other skills, the great majority of teachers embraced the integrative teaching of grammar and more than half of them agreed that grammar needs to be dealt with after students work on communicative tasks.

Along with the results obtained through the questionnaire, semi-structured interview questions that were posed to ten volunteer teachers shed lights on the issues of interest. Interviews revealed that most teachers relied on their past experiences as language learners, teachers and even as parents while making instructional decisions. Although the majority of teachers giving their thoughts during interviews made clear that they opted for the inductive teaching of grammar and regarded grammar as a facilitative component of communication, they sometimes had to teach grammar explicitly for the sake of teaching it due to several factors. These factors were identified to be students' desire to receive explicit grammar instruction, keeping up with the other teachers teaching in the program and saving valuable class time. Even so, most teachers reported that they come up with meaningful ways to present grammar in context, mainly embedding grammar into reading activities. During speaking activities which mostly focused on fluency, teachers reported not to correct students' grammatical mistakes and to work on the problematic issues after the task is done. It was clearly seen that teachers reported beliefs were influenced by personal and contextual factors to a considerable extent. In his comprehensive review of the literature on teacher cognition in grammar teaching, Borg (2003) concluded that the interest among language teachers in formal grammar instruction has not faded, grammar teaching was held valuable especially by language teachers working in FL settings, and teachers referred to their previous language learning experiences. The same situation was also observed in the present study since teachers referred to their past language learning and teaching experiences and did not reveal any signs that research was guiding their beliefs and practices.

In general, the beliefs of the teachers who participated in the study about several issues such as the inductive/deductive and explicit/implicit dichotomy, the use of terminology, teaching grammar to adults vs. young learners displayed the range of ideas and findings reported in the relevant literature. However, there was little conflict concerning the need for attention to grammar in EFL classes. This need did not indicate a preference for direct and formal grammar instruction or ban explicit/implicit grammar teaching from EFL classes. This need also seemed to be in accordance with a less extreme position to grammar teaching, such as the one adopted by Long (1991). Long's (1991) approach suggests that grammar teaching should be embedded in communication, include fewer explicit explanations but more tailored interactional modifications that facilitate comprehension. In contrast to Krashen's (1981) viewpoint which defends the idea of excluding grammar instruction from language classes, Long's (1991) stance to the grammar instruction seems more applicable.

Furthermore, there was no explicit or implicit reference to SLA research, or to any kind of research indicating that teachers made these remarks informed by relevant research. This finding corroborates with the findings obtained by Eisentein-Ebsworth and Schweers (1997)

who demonstrated that teachers were articulate about their beliefs about grammar and referred to several factors such as students' wants and syllabus expectations affecting these beliefs. Although teachers' reported beliefs did not seem to be informed by research on SLA and in particular on grammar teaching, they reflected the tenets of a communicative approach to grammar teaching, a situation that was observed in previous studies as well (Eisentein-Ebsworth & Schweers, 1997).

Insights gathered from the present study may also shed lights on the discrepancies between what research suggests, what is taught to prospective language teachers in teacher education programs and what practicing teachers believe and do in classroom settings. For instance, pedagogical dichotomies (e.g. inductive vs. deductive) discussed in the relevant literature may become blurred to save lesson time or help facilitate students' understanding. In another case, although candidate teachers may be advised to opt for a more discovery-based and inductive approach to grammar teaching by using the target language, practicing teachers may resort to a more teacher-led and deductive grammar instruction partly or mostly in the native language. Borg (1999a) also suggests that the distinction between these pedagogical dichotomies seems to blur in the practice since teachers may make decisions based on contextual factors. In our context, each preparatory language school has its curriculum which specifies the course objectives, topics to be covered and exams that need to be taken in detail, and consequently, each teacher working in these schools needs to stick to the plan. Therefore, teachers' resorting to the deductive teaching of grammar due to contextual factors would be understandable.

Finally, although the present study helped understand the language teachers' beliefs about grammar instruction by using a mixed-methods design, it did not evaluate to what extent these teachers' reported beliefs were reflected in their teaching. Studies investigating teacher cognition may provide higher education administrators, policymakers and teacher educators with insights about how to structure pre- and in-service teacher education programs and foster teacher development and reflective thinking. Thus, more research that focuses on the realities of classroom contexts and the real applications taking place in these contexts needs to be conducted. Moreover, these research efforts need to be made during longer periods of time and by using various data collection tools, and the findings of language teacher cognition research need to be communicated to language teachers.

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TOWARDS A CONTINUUM FROM KNOW-HOW TO SHOW-HOW FOR DEVELOPING EFL STUDENT-TEACHERS' ASSESSMENT LITERACY*

Research Article

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TOWARDS A CONTINUUM FROM KNOW-HOW TO SHOW-HOW FOR DEVELOPING EFL STUDENT-TEACHERS' ASSESSMENT LITERACY*

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Abstract

It mushrooms as an unerring fact that that assessment literacy has been a focus of interest as one of the major professional requirements of a teacher. Correlatively, there are some manifold standards for assessment and measures for assessment literacy. This study, hereat, aims to unearth the prospective English as a Foreign Language (henceforth EFL) teachers' levels of assessment literacy. In this context, the Assessment Literacy Survey developed by Volante and Fazio (2007) together with the student questionnaire of the European Network of Language Testing and Assessment (ENLTA) which was developed in 2004 are exploited to collect data. The participants are thirty-six senior students from the department of English Language Teaching (henceforth ELT) at a state university in Turkey. Fundamentally, the pre-service teachers' utilization of the assessment approaches, and their understanding of underlying principles are at the major axis. As a result, it is reported that prospective EFL teachers are aware of the concept of assessment literacy though they perceive themselves as not adequately qualified. At the very same, practicum courses in which they enroll do not satisfactorily meet their expectations in developing their assessment skills. Similarly, they have a judicious amount of practical knowledge on different types of assessment approaches although they are mindful of the fact that in-class practices are to be laced with various kinds of assessment applications. Some practical recommendations and implications for teacher education are also listed in tow.

Keywords: Assessment literacy, ELT, EFL, professional development, teacher education.

1. Introduction

As one of the integral parts of the teaching-learning process, assessment is regarded as the engine that drives learning (Cowan, 1988; James, McInnis, & Devlin, 2002). Therefore, through the improvement of assessment procedures, it is grounded that learning in higher education is also enhanced (Coombe, Troudi, & Al-Hamly, 2012). In this respect, 'know-how's together with the 'show-how's in assessment blossom as the key elements in an effective teaching-learning process.

Assessing student performance is regarded as one of the essentials of a teacher's job. It is purported that estimated time spent on assessment-related classroom activities by classroom teachers reaches to 50% (Plake, 1993) since assessment is applied for a myriad of purposes: diagnosing the needs of the students, grouping and grading students, evaluating the quality of instruction, triggering students' motivation, enhancing students' achievement, rendering reliable and valid information on the students' achievement results for further training, and so

on and so forth (Brookhart, 1999; Stiggins, 1999). Correlatively, teachers' accuracy in assessment mushrooms as a crucial facet where there are various types of assessment at the levels of district, state and national (Mertler, 2003; Rogers, 1991).

Additionally, it is reported that a typical teacher spends one-third of his/her professional time in assessment, or assessment-related activities (Cheng, 2001; Herman & Drorr-Bremme, 1982; Stiggins & Conklin, 1992). However, it is found out that testing and assessment-related activities are noted as the least pleasant aspect of a teacher's job (Jacobs & Chase, 1992). Henceforth, the pre-service and in-service teachers often do not apply the necessary skills to effectively administer assessment procedures in the classroom (Brookhart, 2001; Campbell & Collins, 2007; Mertler, 2005). Besides, teachers are expected to conduct classroom-based assessment-related activities in line with the state standards set by the current curriculum (Campbell, Murphy, & Holt, 2002). In this vein, there has been an inclination towards employing teachers with testing and assessment expertise. Herein, pre-service teachers are supposed to be involved in specific courses regarding testing, assessment, and evaluation before they step into teaching as a future profession. Ironically, in-service teachers may not feel well-prepared to meet this demand; therefore, stick to traditional forms of assessment so as not to mark this as a weakness. This, later, paves the way towards students' failure to accomplish their full potential due to teachers' illiteracy in conducting an accurate assessment (Stiggins, 2002).

Respectively, Mertler (1999) has found that teacher-led assessment practices are not quite often backed up with required statistical analyses (e.g., reliability analysis, item analysis, etc.) although teachers indicate that they have pursued the essentials of accurate assessment to ensure reliability and validity. Moreover, it is reported within that they could not find enough time to conduct such statistical analyses; even more, they are not aware of what reliability and validity are. That is why they mark themselves as either 'slightly prepared', or 'somewhat prepared' even though they have graduated from a teacher training program as being equipped. Reiterating the same old story, it can be inferred that in-service teachers are left unprepared to test, assess and evaluate students' achievement; however, they learn about the skills of assessment expertise as a requirement of on-the-job training.

In the light of these, it seems clear that without a higher level of assessment literacy, it is not possible to help students attain higher levels of academic achievement. Then, what is assessment literacy?

In recent years, assessment literacy has been touted as a focal point within the scope of teachers' professional development programs (Popham, 2009). Basically, teachers' assessment literacy is described as the teachers' familiarity with the basics of measurement that can be applied in the classroom. In a broader sense, assessment literacy is specified as "the possession of knowledge about the basic principles of sound assessment practice, including terminology, the development and use of assessment methodologies and techniques, familiarity with standards of quality in assessment... and familiarity with the alternative to traditional measurements of learning" (Paterno, 2001, as cited in Mertler, 2003). Therefore, assessment-literate educators are defined (Stiggins, 1995) as the ones who "know the difference between sound and unsound assessment. They are not intimidated by the sometimes mysterious and always daunting technical world of assessment" (p. 240).

Being assessment literate is defined as having knowledge of testing practices, assessment techniques, test types and accurately utilizing each (Hoyt, 2005; Rogier, 2009). Most generally, assessment literacy is divided into two main areas: (1) teachers' assessment knowledge; and (2) teachers' perspectives on assessment knowledge (Wang, Wang, & Huang, 2008). Although it is a sine qua non for today's well-qualified and skillful teachers,

assessment literacy is not probed as a requirement to complete teacher education programs. The only exposure that pre-service teachers are exposed to regarding assessment is that there are some graduate-level courses offered relatively, or a unit in a method class (La Marca, 2006; Stiggins, 2006). Henceforth, there is a gap between teachers' knowledge on assessment, and their assessment-related applications put into use.

On the other hand, novice teachers bereft of assessment literacy are left with a question behind on the kind(s) of assessment that is going to be applied in a given course. However, they are expected to know how to extract students' ideas and assess overall learning (Siegel & Wissehr, 2011). In this sense, developing teachers' assessment literacy is treated as one of the fundamentals of teachers' professional development. Herein, teachers' assessment literacy is to be shaped with both know-hows and show-hows within the scopes of (a) assessing students' understanding of a given topic; (b) labelling instruction for topic-specific assessment; (c) altering required changes according to the needs of the students with disabilities together with those who are English language learners in order to conform with the equality of opportunities (National Research Council, 2001; Siegel, 2007).

To begin to address the gap between the pre-service English as a Foreign Language (hereafter EFL) teachers' assessment literacy in terms of know-hows and show-hows, this study is conducted to unearth their perceptions as the future English language teachers.

2. Methodology

2.1. Purpose of the study

This study probes into the main themes of (a) the EFL student-teachers' knowledge on language testing and assessment, and assessment practices; (b) the EFL student-teachers' perspectives upon language testing and assessment knowledge.

2.2. Participants and setting

The participants of this study are thirty-six senior students from the department of English Language Teaching at a state university in Turkey. Amongst them, 24 are noted female whereas 12 are noted as male students. The range of the participants is reported as 22 (N= 14) and 23 (N= 22). Besides, the participants are marked to have the teaching experience of 0-1 year (N= 18), 2-3 years (N= 14), 4 years and more (N= 4).

After four years of intensive education to become an English language teacher, the student-teachers are expected to develop an understanding of assessment literacy and enhance their skills within. Therefore, it is asked to the participants of this study to note down what kind of courses they have taken in relation to testing, assessment, and evaluation together with the experiences gathered from real-life teaching experiences. Accordingly, it is reported that the participants have micro-teaching and real-life teaching experiences obtained from the courses of 'Approaches and Methods in Language Teaching I-II', 'Teaching English to Young Learners I-II', and 'Teaching Practicum'. Besides, they have taken courses regarding testing, assessment, and evaluation under the name of 'Assessment and Evaluation', 'Testing and Assessment in Foreign Language Education', 'New Trends in Foreign Language Education and European Policies in Foreign Language Education'.

2.3. Data collection instruments

The data are collected in a two-way alternate: quantitative and qualitative. The quantitative data are collected via 'Assessment Literacy Survey' developed by Volante and Fazio (2007). Additionally, qualitative data are gathered by the student questionnaire purported by the European Network of Language Testing and Assessment (2004) on a volunteer basis. The participants are asked to note down their thoughts on language tests,

good and/or bad assessment during the semi-structured interview sessions conducted by the researchers: ‘Please, tell us as much as possible about what YOU think about language tests and assessments. What is a good assessment? What is a bad assessment?’

2.4. Data analysis

By means of descriptive statistics, means and standard deviations are estimated to detect the positive and/or negative rankings from the highest (10) to lowest (1). Besides, One Way Analysis of Variance Test (ANOVA) is applied as a part of quantitative data analysis to report if there is any statistically significant difference in terms of years of teaching experience. On the other hand, for qualitative data analysis, constant-comparison method, which is used to emerge concepts from the data gathered via coding and analyzing simultaneously (Taylor & Bogdan, 1998) is applied to report open-ended interview questions.

3. Findings and results

3.1. Self-reported overall assessment literacy

The mean score for overall self-reported assessment literacy is estimated as 6.72/ 10.00 (N= 36; SD= 1.06). Additionally, no statistically significant difference is spotted in terms of years of teaching experience; $F(2)= 1.265$, $p= .295$ ($p > .05$).

3.2. Understanding the main purpose(s) of assessment

When the participants are asked to list three main purposes for classroom assessment, the most generally used terms are marked as grading, achievement, quantifying, success, evaluating, and pointing the lacks as listed below:

‘In order to grade students.’

‘In order to learn about student achievements.’

‘In order to quantify the learning process.’

‘In order to see how successful students are.’

‘In order to measure lacks of the students.’

Accordingly, the majority of the student-teachers have applied assessment initially for conventional purposes (e.g., assessment of the progress of learning).

3.3. Approaches and methods in assessment

The approaches and methods in assessment together with their utilization and need for further training are elaborated as selected response (multiple choice, matching etc.), constructed response (short answer, essay etc.), personal communication (group discussion, oral presentation etc.), observation (recording through checklists), portfolio assessment (systematic collection of student works and/or materials), and performance assessment (task-based activities, problem-solving activities etc.).

In terms of utilization, the results show that observation is utilized with an utmost importance in assessment practices (M= 8.22; SD= .92). It is followed by constructed response (M= 7.00; SD= .82), selected response (M= 6.66; SD= 1.17), personal communication (M= 6.61; SD= 1.18), and performance assessment (M= 6.11; SD= 1.72) respectively. However, portfolio assessment is reported to be utilized least in assessment practices by student-teachers (M= 4.39; SD= 1.78).

Within the scope of need for further training, the results indicate that there is a need for portfolio assessment practices with the highest mean score of 7.83 (SD= 1.56). It is followed by performance assessment (M= 7.28; SD= .81), personal communication (M= 7.05; SD= 1.49), observation (M= 6.56; SD= 2.25), and selected response (M= 5.17; SD= 1.70). However, constructed response is reported to be needed least for further training in assessment practices by student-teachers (M= 4.39; SD= 1.40).

3.4. ENLTA student questionnaire: University instruction

The student-teachers as the participants of this study are asked to report one suggestion within the scope of university instruction so that they could enhance their assessment literacy. Herein, some of the student-teachers' answers can be listed as:

'They need to provide more practical and realistic courses. For example, we learned many approaches and principles about testing but we didn't prepare an exam.' (Student A)

'More communication.' (Student B)

'I think rather than focusing on only the theoretical part of the assessment itself, we emphasize more how to apply it in a classroom environment.' (Student C)

3.5. ENLTA student questionnaire: Practicum supervision

The student-teachers as the participants of this study are asked to report one suggestion within the scope of practicum supervision so that they could enhance their assessment literacy. Herein, some of the student-teachers' answers can be listed as:

'We may take an active role in the assessment process of the students. In this way, we can transfer what we've learnt theoretically in the classroom to a real classroom.' (Student D)

'If I correctly understand the meaning of practicum supervision, the pre-service teachers, that is ELT students, can involve in the real assessment process in order to understand how the things work in the real learning and teaching environment.' (Student E)

'Providing much more opportunities than ever is a good way.' (Student F)

4. Discussion and conclusion

Teacher education programs are not adequate to train teacher candidates before entering the classroom (Mertler, 2005; Rogier, 2009). Merely half of the teacher education programs are depicted to include a course on assessment skills (Rudner & Schafer, 2002). Besides, teacher education programs which provide undergraduate level courses on assessment (Campbell, Murphy, & Holt, 2002), should not basically report that student-teachers are not well-prepared to be able to use them effectively in a real classroom setting. This is confirmed by the findings of this study that self-reported overall assessment literacy of the prospective

English language teachers is marked as 6.72 out of 10 with no significant difference in terms of years of teaching experience.

Correlatively, when the student-teachers are asked to report what they do understand by the term ‘assessment’, the main purpose(s) of assessment is remarked as the assessment of learning by the three-quarters of the total number of participants. This might be linked to the fact that pre-service teachers are more inclined to succumb to observation, they are somehow doomed to replicate rather conventional and undiscovered assessment-related implementations (Graham, 2005).

The approaches and methods in assessment together with their utilization and need for further training are elaborated as selected response (multiple choice, matching etc.), constructed response (short answer, essay etc.), personal communication (group discussion, oral presentation etc.), observation (recording through checklists), portfolio assessment (systematic collection of student works and/or materials), and performance assessment (task-based activities, problem-solving activities etc.) within the scope of this study. Regarding utilization, observation ranks first whereas portfolio assessment is in the lead in terms of the need for further training. Therefore, it is not surprising that portfolio assessment is reported to be utilized least in assessment and assessment-related practices by student-teachers. However, recently, forms of authentic assessment have been enormously seen as pivotal to increase students' achievement (Fetter, 2003; Hauge, 2006; Koh, 2011). In contrast to conventional ways of assessment (e.g., paper and pencil tests), learning outcomes and learners' progress should be tracked through a holistic way of assessment in order to keep up with higher order instructional purposes.

As the participants of this study, the student-teachers are also asked to report one suggestion within the scope of university instruction so that they could enhance their assessment literacy. It is, herein, reported that student-teachers are in need of more authentic and practical courses as they still have some problems in preparing appropriate exam for their future students. In this vein, it can be deduced that student-teachers are not adequately equipped with such a training during pre-service education. On the other hand, it is a crystal clear fact that teacher educators need to see a myriad of assessment methods so that pre-service teachers construct a much deeper realization of the use of different kinds of assessment approaches (Allen & Flippo, 2002; Hargreaves, Earl, & Schmidt, 2002).

Correlatively, the student-teachers are also asked to report one suggestion within the scope of practicum supervision so that they could enhance their assessment literacy. It is, thereto, stipulated that they want to take an active role in the practicum sessions as these sessions offer real-life experiences. Besides, a low level of assessment literacy could be exacerbated by the pressures of student achievement and learning apart from constraints at school (e.g., content, time, classroom management etc.). In this context, most of the teachers apply to modification on the course content, and even on the format of instruction. Within and beyond Europe, the Common European Framework of Reference for Languages (CEFR) and the European Language Portfolio (ELP) are proposed for the goodness of language teachers so that they could adopt new ways of language assessment (Mirici & Kavaklı, 2017). A critical point to be considered herein is that there is a brand-new concept of language assessment literacy (LAL) besides assessment literacy, which is, in general sense, the familiarity of the language teachers' to the definitions and applications of how to assess language-related practices (Malone, 2013; Taylor, 2009). Therefore, it requires some additional competencies as there is a combination of skills regarding assessment literacy and language-specific ones (Inbar-Lourie, 2017).

One more to note, the decisions of the teachers have an utmost importance as the teacher has a critical role in the assessment process (Malone, 2013). However, there is a lack of appropriate mentorship towards teachers' professional development. In order to prepare teachers for the current curriculum together with the requirements of the twenty-first century, teacher training programs are to be revised and amended (Kavaklı & Arslan, 2017). In doing these, the stakeholders such as governments, educational leaders, administrators, teachers and all other vested parties are expected to share a common ground, and even more, allocate funding for expertise and material resources, and to a much greater extent, funding for teacher time (McMunn, McColskey, & O'Connor, 2002). The benefit of such a strong communication amidst the stakeholders would also help in-service and pre-service teachers to enhance an understanding of the essentials of assessment, and shape their instructional choices accordingly.

ENDNOTE

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EPOSTL: REVISITING THE ROLES OF LANGUAGE TEACHERS AT A RECENTLY ESTABLISHED ELT DEPARTMENT

Research Article

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EPOSTL: REVISITING THE ROLES OF LANGUAGE TEACHERS AT A RECENTLY ESTABLISHED ELT DEPARTMENT

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Abstract

The present study investigated the self-perceptions of student teachers on the role of language teachers stated in the EPOSTL at a recently established ELT department in a public university. The descriptors in the Role of the Language Teacher part of the EPOSTL were adapted into five-point Likert-type items changing from strongly disagree to strongly agree. The quantitative inquiry was employed to the data through computer software. The first research question was answered through percentages (%) and frequencies (f); the other two research questions were answered through Independent-Samples T-Test by comparing the means (\bar{X}) and standard deviations (SD). The results were reported descriptively at the end. According to the results, some of the student teachers of ELT had difficulty in relating theory and practice, giving constructive feedback and accepting feedback, conducting action researches to solve classroom problems, and following the scientific documents in language teaching. Based on the results, several pedagogical implications that can be implemented for the forthcoming ELT classes at the department were suggested.

Keywords: EPOSTL, teacher roles, ELT, EFL.

1. Introduction

1.1. The EPOSTL

The European Portfolio for Student Teachers of Languages (EPOSTL) brought together the items on self-assessment regarding language teaching qualifications which aim at student teachers of languages. Though some of the items in the EPOSTL are questionable (Arıkan, 2016), it has been widely accepted in education programs of language teachers as a standard self-assessment tool regarding language teaching practices. Since the attention to teacher training programs began to hold an indispensable role in education policies of the countries which strictly follow advancements across the world, the application of standard documents of this kind gained importance in order not to fall behind developed counterparts.

The EPOSTL as a standard document not only addresses to student teachers of languages to assess their didactic knowledge and competences, skills but also helps them to monitor themselves and record their experiences throughout their education in language teaching to become autonomous teachers (Burkert & Schwienhorst, 2008; Newby, 2012). Developed as an end product of a program conducted by the European Centre for Modern Languages (ECML) of the Council of Europe (CoE) and published in 2007, the EPOSTL consists of six main sections:

- *Personal Statement*
- *Self-Assessment*
- *Dossier*
- *Glossary of Terms*
- *Index*



- *Users' Guide (EPOSTL; p.5)*

Personal Statement part requires student teachers to reconsider themselves on common questions in connection to teaching prior to their education; Self-Assessment Part presents descriptors in the form of 'can-do' statements for student teachers to assess themselves; Dossier part requires student teachers to provide examples from their teaching practices to make their self-assessment more transparent; Glossary part defines the key terms operated in the EPOSTL; Index part shows the locations of the terms to help student teachers; and lastly, Users' Guide provides comprehensive information to student teacher about the EPOSTL (EPOSTL; p.5). The competences required from a language teacher are reflected through 193 descriptors under seven broad categories, which are namely: Context, Methodology, Resources, Lesson Planning, Conducting a Lesson, Independent Learning, and Assessment of Learning. These categories further are divided into sub-categories consisting of descriptors which address a language teaching principle (EPOSTL; p.6). The following are some of the examples in the EPOSTL for student teachers:

- *Aims and Needs: "I can take into account differing motivations for learning another language." (EPOSTL, descriptor 3, p. 16).*

- *Listening: "I can help learners to apply strategies to cope with the difficult or unknown vocabulary of a text." (EPOSTL, descriptor 7, p. 25).*

- *Grammar: "I can use grammatical metalanguage if and when appropriate to the learners' needs." (EPOSTL, descriptor 4, p. 27).*

- *Using Lesson Plans: "I can finish off a lesson in a focused way." (EPOSTL, descriptor 6, p. 39).*

1.2. The roles of a language teacher

Our century witnessed critical changes in terms of the roles of language teachers in a way that affecting whole teaching and learning processes. The developments in technology and their reflections in conventional classrooms, in which we can see smartboards in most of them, have been tremendous. In this circumstance, transformations in teacher behaviors in classrooms seem inevitable fact. Nowadays, the roles of language teachers are quite different from those colleagues who taught 30 years ago. Controller, prompter, participant, resource, and tutor etc. whatever we are, either consciously or subconsciously we need to make decisions continuously to provide the most appropriate teaching and learning contexts for our students (Harmer, 2007).

The EPOSTL provides ten descriptors on the role of a language teacher for student teachers of languages, and, through these descriptors, they can reflect upon their language teaching competences. The descriptors provide a general description of the roles expected from language teachers, and they can assess their teaching practices accordingly. Promoting the importance of language learning to the parties, appreciating the value of cultural diversity in classrooms, approving the previous language learning experiences of students, relating theory and practice in teaching, assessing teaching in terms of experience, feedback and outcomes, assessing teaching in terms of theoretical principles, accepting feedback from colleagues and providing feedback to colleagues on teaching, reaching important scholarly documents on teaching and learning, and conducting action researches to enhance teaching practices are among the roles of a language teacher defined in descriptors of the EPOSTL (EPOSTL, p.17-18).

The current study is an important one in terms of both its scope and target group studied. The student teachers of a recently established ELT department at a public university and their perceptions of themselves in the shoes of a language teacher hold crucial importance in terms of evaluating the contents of the courses in the department in order to enhance quality of the practices not to fall behind the ELT departments which are relatively more experienced considering their foundation years. For this reason, three research questions of this study, which are based on perceptions, gender, and preparatory class education (PCE), can be sequenced as follows:

1. What are the self-perceptions of pre-service ELT teachers on the roles of language teachers in terms of EPOSTL descriptors?
2. Is there a statistically significant difference between the male and female participants' self-perceptions on the roles of language teachers stated in the EPOSTL descriptors?
3. Is there a statistically significant difference between the self-perceptions of the participants who attended one year of PCE and those who did not in terms of the roles of language teachers stated in the EPOSTL descriptors?

2. Literature review

The EPOSTL has been applied in many countries such as Japan, Turkey, Kazakhstan though it was intended for the student teachers of languages across Europe (Mirici, 2015; Newby, Fenner & Jones, 2011; Seitova, 2017; Takagi, 2015). As this is the case, the researcher tried to provide some research results from different language teacher training contexts.

Cindrić, Andraka, and Bilić-Štefan (2015) reported the results of the EPOSTL implementation as an integral part of ELT courses carried out at a teacher training program for several years. They presented the findings from student teachers' feedback in relation to the application of the EPOSTL and reported the problematic aspects for the student teachers. Also, Mirici and Hergüner (2015) discussed and provided several useful suggestions regarding the functions and efficiency of implementation of the portfolio in two different language teaching programs, German and English, at a public university. The results indicated that the implementation of the EPOSTL contributed to the development of metacognitive strategies of student teachers to become autonomous learners and this can be sequenced among the important factors which lead language teachers to adopt the principles of Common European Framework of Reference (CEFR) and the European Language Portfolio (ELP) in their teaching practices. Similarly, Hoxha and Tafani (2015) described the application of the EPOSTL in a university in Albania and shared the experiences of student-teachers and lecturers. They collected the data through two questionnaires implemented before and after the application of the EPOSTL. They reported that students had difficulties at the beginning of the EPOSTL applications and they consulted experts. Also, they expressed that while half of the student-teachers found the EPOSTL beneficial. Furthermore, some student-teachers stated that academic staff had insufficient knowledge of the EPOSTL. Additionally, Scahuber (2015) studied the role of dialogical reflection in the EPOSTL application for awareness-raising in teacher training at a university in Switzerland. The results reported that the EPOSTL not only enhanced the valuable didactic knowledge for dialogic and reflection processes, it also presented more scaffolded reflection opportunities through its components.

The studies also focused on the nature of the EPOSTL itself and its application beyond the pre-service teacher training programs. For example, Bergil and Sarıçoban (2017) studied 4th-grade student teachers' self-efficacy levels at an ELT department of a public university. They

adapted the EPOSTL into a Likert-type scale with 5 points and applied it 38 student teachers. They suggested the integration of the EPOSTL to teacher training programs to have more reflective and efficient processes for student teachers. Additionally, Seitova (2017) investigated in-service ELT teachers' opinions on the EPOSTL practice in advocating professional development at an international university in Kazakhstan. The qualitative data of the study were collected through interviews and analyzed via thematic analysis. The results came up with the positive views of the participants on the EPOSTL in connection to self-assessment and self-reflection features. The results also recommended the EPOSTL implementations for in-service language teachers.

3. Methodology

3.1. Participants

The study comprised 32 participants in total. The details with regard to the demographic profiles of the participants were presented in the following table (Table 1) as follows:

Table 1. *Demographic Profiles of the Participants*

Profiles		n	%
Gender	Male	6	18.8
	Female	26	81.3
	Total	32	100.0
Age	22	13	40.6
	23	13	40.6
	24	5	15.6
	25/above	1	3.1
	Total	32	100.0
PCE	Yes	24	75
	No	8	25
	Total	32	100.0
Graduated School Type	Anatolian High School	18	56.3
	Teac. Tra. A. H. S.	5	15.6
	Other Types of H. S.	9	28.1
	Total	32	100.0

There were 6 male participants (18.8%) and 26 female participants (81.3%); 40.6% (n=13) of the participants were at the age of 22, 40.6% (n=13) of the participants were at the age of 23, 15.6% (n=5) of the participants were at the age of 24 and 3.1% (n=1) of the participants were at the age of 25 and above. 75% (n=24) of these participants attended one year of extensive PCE at the school of foreign languages prior to their faculty education. 56.3% (n=18) participants graduated from Anatolian high schools, 15.6% (n=5) participants graduated from teacher training Anatolian high schools, lastly, 28.1% (n=9) participants graduated from other types of high schools.

3.2. Data collection

The data were collected from the pre-service teachers of a recently established ELT department of a public university. The data were collected after all of the exams in the department were finalized and before their graduation ceremony. At this point, the data obtained from the participants were extremely valuable as the students were the first ones who would graduate as language teachers of English. Responses of the students would both reflect the language education program at the faculty and enable the lecturers to see whether there were problematic points in their processes.

3.3. Instrument

The researcher adapted the ten items in the Role of the Language Teacher part of the EPOSTL (2007; p. 17-18) into five-point Likert-type items ranging from strongly disagree to strongly agree to see the student teachers' views on the self- assessment items. The researcher graded the items as 'strongly agree=5', 'agree=4', 'undecided=3', 'disagree=2' and 'strongly disagree=1'.

3.4. Data analysis

The researcher employed a quantitative inquiry into the data through computer software. Percentages (%) and frequencies (f) regarding the responses of the student teachers were presented via descriptive statistics to answer the first research question. Independent-Samples T-Test was implemented to the data in order to compare the means (\bar{X}) and standard deviations (SD) to answer the second and third research questions of the study. Finally, the results were reported descriptively.

4. Results

The self-perceptions of student ELT teachers on the language teacher roles in terms of EPOSTL descriptors were investigated in the first research question. The results regarding the self-perceptions of the pre-service ELT teachers were presented in the following table (Table, 2) as follows:

Table 2. *Pre-service ELT teachers' self-perceptions on the role of language teachers*
(SD=Strongly Disagree, D=Disagree, U=Undecided, A= Agree, SA=Strongly Agree)

Item	SD		D		U		A		SA		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
1.Item	-	-	1	3.1	-	-	25	78.1	6	18.8	32	100
2.Item	-	-	-	-	2	6.3	24	75	6	18.8	32	100
3.Item	-	-	1	3.1	5	15.6	23	71.9	3	9.4	32	100
4. Item	-	-	2	6.3	7	21.9	18	56.3	5	15.6	32	100
5. Item	-	-	-	-	6	18.8	19	59.4	7	21.9	32	100
6. Item	-	-	1	3.1	6	18.8	21	65.6	4	12.5	32	100
7. Item	-	-	2	6.3	5	15.6	15	46.9	10	31.3	32	100
8. Item	-	-	-	-	8	25	15	46.9	9	28.1	32	100
9. Item	-	-	3	9.4	9	28.1	16	50	4	12.5	32	100
10. Item	1	3.1	-	-	7	21.9	20	62.5	4	12.5	32	100

The first item investigated the preservice ELT teachers' perspectives on whether they can encourage all parties to learn a language. The results showed that most of the participants agreed with the statement (A=78.1%, SA=18.8%). Only one of the participants disagreed

with the statement (D=3.1%). The second item investigated the participants' perspectives on the appreciation of the value given to the classroom by students coming from different cultures. Most of the participants agreed with the statement (A=75%, SA=18.8%). Only two of the participants expressed that they were undecided (U=6.3%). The third item investigated the participants' views on whether they can estimate the learners have already background knowledge of a language or languages and they can benefit from this prior knowledge in learning a new language or languages. Most of the participants agreed with the statement (A=71.9%, SA=9.4%). Only one of the participants disagreed (D=3.1%) and five participants were undecided on the statement (U=15.6%). The fourth item investigated the participants' views on whether they can relate their language environments to the language learning theories etc. Eighteen of the participants agreed on the statement (A=56.3%) and five of the participants strongly agreed on the statement (15.6%). Seven participants were undecided on the statement (U=21.9%) and two participants disagreed with the statement (D=6.3%). The fifth item investigated the participants' views on whether they can reflect their teaching experience critically and adapt their teaching practices accordingly. Nineteen of the participants agreed on the statement (A=59.4%) and seven participants strongly agreed on the statement (SA=21.9%). Six participants were undecided (U=18%). The sixth item investigated the participants' views on whether they can critically evaluate their teaching practices within the light of the principles of related theories. Twenty-one participants agreed (A=65.6%) and 4 participants strongly agreed on the statement (SA=12.5%). One participant disagreed with the statement (D=3.1%) and six participants were undecided (U=18.8%). The seventh item investigated the participants' views on whether they can value the feedback of their colleagues to reflect them in their teaching practices. Fifteen participants agreed (A=46.9%) and ten participants strongly agreed with the statement (SA=31.3%). Five participants were undecided (U=15.6%) and two participants disagreed with the statement (D=6.3%). The eighth item investigated the participants' views on whether they can observe their colleagues' teaching practices in terms of methodological perspectives and provide them with feedback. Fifteen participants agreed (A=46.9%) and nine participants strongly agreed with the statement (SA=28.1%). Eight participants were undecided on the statement (U=25%). The ninth item investigated participants' views on whether they can search for scientific studies regarding language teaching and learning practices. Sixteen participants agreed (A=50%) and four participants strongly agreed with the statement (SA=12.5%). Nine participants were undecided (U=28.1%), and three participants disagreed with the statement (D=9.4%). Lastly, the tenth item investigated the participants' views on whether they can carry out action researches regarding with their teaching practices. Twenty participants agreed (A=62.5%) and four participants strongly agreed with the statement (SA=12.5%). Seven participants were undecided (U=21.9%) and only one participant strongly disagreed with the statement (SD= 3.1%). Overall, the results showed that the first item was most agreed item in the scale (A=78.1%, SA=18.8%), the ninth item was the most undecided item (U=28.1%) and only one of the participants chose strongly disagree option (10. Item).

The second research question investigated whether there was a significant difference between the male and female participants' self-perceptions on the role of language teacher in terms of the EPOSTL descriptors. The results regarding the second research question were presented in the following table (Table 3) as follows:

Table 3. *The participants' self-perceptions on the role of language teachers in terms of the EPOSTL descriptors*

Gender	N	\bar{X}	S	SD	t	p
Male	6	3.85	0.47	30	0.64	.52*
Female	26	3.95	0.34			

*p>0.05

According to the table (Table 3), there was no statistically significant difference between the female participants and male participants in terms of their views on the role of language teacher $t(30)=0.64$, $p>0.05$. The mean score of female students' views on the role of a language teacher ($\bar{X}=3.95$) was higher than the mean score of the male participants' views on the role of a language teacher ($\bar{X}=3.85$). This showed that gender did not affect students' views on the role of a language teacher.

The third research question investigated whether attending one year of PCE was a contributor to the participants' self-perceptions on the role of language teacher in terms of the EPOSTL descriptors. The results of the analyses regarding this research question were presented in table (Table 4) as follows:

Table 4. *The participants' self-perceptions on the role of language teachers in terms of the EPOSTL descriptors*

PCE	N	\bar{X}	S	SD	t	p
Yes	24	3.91	0.36	30	0.66	.51*
No	8	4.01	0.36			

*p>0.05

According to the table (Table 4), attending one year of extensive PCE before ELT department at the education faculty did not affect participants' views on the role of language teacher $t(30)=0.66$, $p>0.05$. The mean score of the participants who attended PCE before ELT department at the education faculty ($\bar{X}=3.91$) was lower than the mean score of the participants who did not attend PCE before ELT department at the education faculty ($\bar{X}=4.01$). This showed that attending or not attending one year of extensive PCE before ELT department at the education faculty did not affect students' views on the role of a language teacher.

5. Discussion

The current study investigated the student teachers' self-perceptions on the role of the language teachers through the descriptors proposed in the EPOSTL. Detailed analyses regarding the participants' responses revealed the student teachers' self-perceptions on the roles of language teachers at a recently established ELT department. It can be stated that the current study contributed to the previous studies by handling an aspect of the EPOSTL, which was not dealt with previously. For example, Burkert and Schwienhorst (2008) expressed that the descriptors can enhance student teachers' awareness towards teaching. Likewise, Mirici and Hergüner (2015) suggested the application of the documents of CEFR and ELP in addition to EPOSTL in language teacher education programs to encourage learner autonomy, multiculturalism, and self-assessment. Similarly, Hoxa and Tafani (2015) stated EPOSTL as a fundamental guide in training student teachers of languages. Schaubert (2015)

and, later on, Bergil and Sariçoban (2017) mentioned its importance as a reflection tool in teacher education programs. Lastly, Seitova (2017) reported the application of the EPOSTL as an instrument in enhancing in-service language teachers' professional developments. With this study, a neglected aspect of the EPOSTL, the roles of language teachers, was searched and discussed in order to increase the efficiency of the course contents at the ELT department to eliminate the problematic issues within the light of the findings.

6. Conclusion

The present study can be regarded as an important one dealing with the roles of language teachers, one of the neglected aspects of the EPOSTL, since the literature did not indicate a similar study beforehand. Previous studies focused on the aspects of the EPOSTL such as autonomy (Burkert & Schwienhorst, 2008), efficiency of the EPOSTL (Mirici & Hergüner, 2015), self-assessment (Seitova 2017), culture (Arıkan & Zorba, 2016), application of the EPOSTL in electronic setting (Mirici & Demirbaş, 2013). The findings of the current study can contribute to forthcoming studies to be conducted in the area.

Three main issues, which seem to be problematic and need to be dealt with according to the views of several prospective ELT teachers at the end of their faculty education, can be concluded from the results. Firstly, finding appropriate theories regarding language teaching and learning that can help teaching practices can be regarded as a point that several student teachers were in need of help in their future career. Secondly, accepting feedback from the peers or providing feedback to the peers in terms of the teaching practices can be considered another important factor that several student teachers did not express positive views. Lastly, conducting an action research to enhance the pedagogical processes in teaching and relating the didactic issues with the current literature were among the problematic issues for several students.

In conclusion, relating theory and practice in language teaching appropriately, providing constructive feedback on the procedures, and reaching and following the scientific publications in language teaching and learning were the competencies that several prospective teachers were not satisfied in terms of the roles a language teacher proposed in the EPOSTL.

7. Pedagogical implications

Several suggestions can be proposed for the departments which have similar problems. Primarily, the nature of language theories and their reflections on the language teaching and learning in terms of activities or practices can be handled in numerous ways in the classes at ELT departments to provide deep insights for the student teachers. Also, the effect of feedback on the efficiency of a language course can be acknowledged and student teachers' tolerance both to provide feedback to peers and accept feedback from peers or colleagues can be enhanced through sample activities provided in the classes. Lastly, how to carry out an action research to identify a pedagogic problem can be introduced in classes and several sample practices in language classes can be presented for the prospective language teachers.

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