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Full Length Research Paper

Cultural similarities in Lausanne emigrants: An evaluation in terms of the hospitality value

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The purpose of this study is to compare the cultural similarities of Lausanne Emigrants who were forced to compulsory migration in accordance with the Treaty of Lausanne from Develi region of Kayseri to Kozani and Ioannina regions of Greece in terms of the "hospitality" value. Conducted during the two separate trips to the region during 2017 and 2019, the study has the characteristics of a descriptive survey model. The study was designed as a qualitative case study, and interview and observation techniques were used. Everyone who participated in the study stated that hospitality is important, and although in the past people used to visit each other frequently, this tradition has been forgotten recently, and the new generation has not paid much attention to it. While the participants stated that those who came from outside the village were regarded as guests of God and were entertained, they also stated that they have not had overnight guests anymore since there are hotels in their villages, but there are still overnight visitations among the relatives. While all of the participants expressed that hospitality is their ancestral tradition and these traditions should be protected, they also stated that the younger generation has not given much attention to these values with the spread of internet and especially social media. Following the footsteps of this study results, wedding and marriage rituals and traditions, funeral traditions and food culture of the emigrants can be examined in future studies.

Key words: Develi, Greece, hospitality, Kozani, Lausanne, migration, population exchange.

INTRODUCTION

An important value in Turkish culture as it is in many societies, the concept of guest-hospitality is of Arabic origin and corresponds to the word visitor in Turkish. In the Dictionary of Turkish Language Institution, it is defined both a traveler and a person who comes overnight to a house or a place of stay during a travel. Visitor refers to someone who temporarily goes to someone else's house and gets entertained there (Altunbay, 2016: 359). Used in the sense of going on a

journey, taking the road and traveling (Toprak, 2019: 76), visitation is a short-term overnight or night visit to a house announced or unannounced person. When the visitation is overnight, visitation refers to announced or unannounced home visits for couple of days. Koç (2003) states that in TDHS-98 people who are not members of the household and who have stayed in the household as a guest the day before the survey date are defined as guests. Toprak (2019: 76) describes guest as the person

who comes suddenly and is welcomed by the owner of the house, especially the woman of the house. Toprak (2019: 76) states the importance of hospitality in Turkish culture and that the woman of the house also hosts visitors even though her husband is not at home, using the words from DedeKorkut, "The pillar of the house is that when a visitor comes to the house from far away, the woman of the house feeds and hosts the visitor even if the husband is not at home".

Like many social values, hospitality is a value that has existed since the early periods of Turkish social life and that still preserves its importance. "I brought the dying people back to life: for the naked people, I found clothing, the poor people, I made rich, the scanty people, I made numerous" was carved on the Orkhon Inscriptions (Gökalp, 1976: 206). These words prove that hospitality and visitation is a value that comes from the past and has an important place within the society. Hospitality and feasts amongst the Turks were sometimes so exaggerated that the host took his wife and children after the feast and took them out of their tent. Guests would pillage the owner's possessions and goods. This was called loot potlatch (yağmalıpotlaç) (Doğan, 2009: 27).

The expression *salt-bread right* amongst the Turks is the symbolization of friendship, commitment, gratitude, blessing, loyalty, sincerity, altruism, bravery, honesty, generosity and hospitality (Koca, 1977: 60). What stands out in hospitality and makes it take its place in cultural life as a value is the methods of welcoming and entertaining the guests. This may vary from culture to culture. Altunbay (2016: 359) states that visitation is used as *gonag* in Azerbaijani Turkish, *kunak* in Bashkir Turkish, *kon*ak and *meyma*n in Kazakh Turkish, *konok* and *meyman* in Kyrgyz Turkish, *mehmàn* in Uzbek Turkish, *kunak* and *mósafir*in Tatar Turkish, *mīhmān* in Turkmen Turkish, and *konak* and *mehman* in Uighur Turkish. Amongst these, *mihman* and *konuk*are more commonly used.

Another part of hospitality is the catering to the guests. These treats vary according to region and take different forms. In certain periods, these treats were not given to the household and saved aside so that they would be offered to the guests when they come. Therefore, there were rooms for the guests in houses and also treats prepared and saved for them. Tezcan (1993) and Güler (2010) state that the treats offered to the guests have become traditional and they are a measure of hospitality. The respect given to the guest and the treats offered to them show the religious aspect of hospitality. The religious saying "The guest comes with ten fortunes, eats one, and leaves the rest to the owner of the house" reinforces the belief that guests should be treated flawlessly due to the understanding that guests will bring blessings. *"God will send a guest to a house before sending his mercy and blessing"*also shows that blessings of the house will increase with the treats offered to the guests (Aksoy, 1996: 200 cited in Altunbay,

2016: 360). Similarly, Bolat (2007: 141) states that the blessings the house increase with the treats offered to the guests. The treats given to the visitors also reveal the change and loyalty of the guests' feelings and thoughts towards their hosts. The understanding of "A cup of Turkish coffee, remembered for forty years" makes the guests remember the treats and the hospitable environment they have been in.

Another prominent ritual in hospitality is to entertain and sending the guests. The influence of the old Turkish customs and traditions along with Islam cannot be overlooked in all these practices done like a religious duty (Altunbay, 2016: 360). Although some of the sayings about hospitality are negative, many of them are positive. Some of these sayings are as follows:

"Man is not a burden to man, life is not the property of the body", "The host is the servant of the guest", "You can't ask the guest to go", "Respect the guest, even if he is a disbeliever", "The guest's blessings come afterwards", "The one who loves guests will never have a naked table", "The guest comes with his fortune", "The guest comes with ten fortunes, eats one, and leaves the rest to the owner of the house", and *"The guest's foot is auspicious"*(Yurtbaşı, 2012: 370, Altunbay, 2016: 361).

Hospitality can be considered as the integration of self-confidence and love for humanity (Sancak et al., 2013: 473). Over time, many factors such as women's participation in business life, increase and differentiation in work hours and economic concerns changed the form and value of hospitality. Previously, visitations happened by dropping in announced, and guests were treated with the already existed food at home. This kind of visitation changed into another kind of visitation where the guests have to call the owner of the house one or couple of days earlier. In this kind of visitation, guests are treated to very lavish food as if they are showing off. Nowadays, visitations are generally done in the evenings and can happen with dinner or not.

This study is important in the sense that it will reveal to what extent the Greeks who lived in Turkey preserved the hospitality value when they migrated to Greece and how the hospitality they show in Greece is similar to hospitality in the Turkish culture. The purpose of this study is to compare the hospitality of Lausanne Emigrants who were forced to compulsory migration in accordance with the Treaty of Lausanne from Develi region of Kayseri to Kozani and Ioannina regions of Greece with the hospitality in Turkish culture.

MATERIALS AND METHODS

Study design

The study is a descriptive one and is designed as a qualitative case study. In qualitative research, data collection tools such as

observation, interview and document analysis are used, and a perceptions and events are revealed in a natural and holistic way (Yıldırım and Şimşek, 2005). Qualitative researchers are interested in understanding the meanings people make (Merriam, 2013). Creswell (2013) states that a qualitative approach including data analysis by establishing patterns and themes of the inductive and deductive data collections that are sensitive to people and places. Various research techniques are employed to learn the thoughts, feelings and attitudes of people who are the subjects of social reality (Türnüklü, 2000: 543). Therefore, interview technique was employed to collect the data. Interview as a research technique is a form of controlled and purposeful verbal communication between the researcher and the person who is the subject of the research (Cotien and Manion, 1994: 271 cited in Türnüklü, 2000: 543). In this study, observation technique was also included because of the fact that two different visits were made to the researched areas and houses at two different times.

Study group

In order to obtain as rich data as possible, the study group was determined by using maximum variation sampling technique, one of the purposeful sampling methods. Maximum variation sampling technique is used to create a relatively small sample and to reflect the diversity of individuals who may be party to the problem studied in this sample. Findings and results that may arise from such research are richer than the results obtained by another method. The purpose behind maximum variation sampling is not to create variation to make generalization. Instead, it is to find out whether there are any common phenomena amongst the situations that show diversity and to present the problem with its different dimensions according to this diversity (Yıldırım and Şimşek, 2011). According to Patton (2014), there are two benefits of creating such a sample. One is the detailed description of the dimensions of each situation in the sample, and the other is the determination of common themes and their values arising between situations that vary greatly (cited in Yıldırım and Şimşek, 2011). This sampling method sometimes involves negativity or inappropriate examples and variations of the phenomenon (Merriam, 2013).

The study group consisted of the children and grandchildren of the emigrants who migrated from Develi region of Kayseri and settled in Kozani and Ioannina regions of Greece. While convenient sampling was employed to select the people to be included in the study sample, maximum variation sampling, one of the purposeful sampling methods, was employed to determine the people to be interviewed. Maximum variation sampling aims to reveal the same situation with various distributions as much as possible and to reach richer results (Flick, 2002). For this purpose, the views of Mr. Andreas Kostantinidisi, the president of Faraşalılar Association established by the emigrants in Kozani, were taken into consideration. According to his recommendations, the participants were chosen amongst the children and grandchildren of the emigrants from Develi, Kayseri who can speak Turkish and who volunteered. Thus, the study group consisted of a total of 11 married individuals. Two women and two men were from the village of Petrana (Taşçı) of the Kozani region, two women and two men from the village of Vathilaykos (Çukuryurt) of the Kozani region, two women and one man from the village of Bafra of the Ioannina region.

The rationale for the inclusion of Petrena and Vathilaykos villages from the Kozani region was that these two villages were founded with the exact same names in Greece by the people who migrated from Turkey. Those who migrated from the village of Yenice also founded a village in Greece with the same name, but no one was interviewed in Yenice because their location was 150 km away from Kozani, and the village was not accessible due to excessive rain

during the first trip. The reason for the inclusion of the village of Bafrawas that there were emigrants from Bafra, Samsun Bafra as well emigrants from the villages of Zile and Karacaörenfrom Develi.

Data collection tool

In the study, semi-structured interview method was used for data collection. In the semi-structured interview method, the researcher tries to discover the subject determined with the interviewee. If the researcher discovers specific areas related to the subject and the problem, he or she can examine these areas by asking his or her questions in detail (Yıldırım and Şimşek, 2011). In addition, the researcher can prepare the interview questions before the interview and change the questions according to the answers given by the participant during the interview, can change the order of the questions or add additional questions if necessary (Çepni, 2014). Patton (2014) discussed the semi-structured interview with the interview form approach and stated that the interview form method was used to obtain the same kind of information from different people. According to another view, semi-structured interview is a type of interview where the questions are flexible, where specific information can be obtained from each participant, where an interview guide containing semi-structured interview questions exists and where there are no predetermined statements (Merriam, 2013). The necessary expert opinion was taken to develop the interview questions for the study, and the questions were finalized as a result of the recommendations made. Made up of open-ended questions, the interview form, which was developed by taking the opinions of experts from the fields of educational sciences, sociology and Turkish language, was used as a data collection tool.

Data collection and analysis

The study data was obtained from the interviews conducted as a result of two separate visits to the aforementioned regions in November 2017 and November 2019. Since the researcher wanted the participants to be comfortable, the interviews were conducted when and where the participants wanted. Interviews lasted an average of 15-20 min. All interviews were recorded using a voice recorder with the permission of the participants.

The obtained data were analyzed using descriptive analysis method (Yıldırım and Şimşek, 2011). The descriptive analysis technique was preferred because it enables the data to be summarized and interpreted according to the themes determined before the analysis (Yıldırım and Şimşek, 2011). Voice recordings were analyzed, and interviews with each interviewer were transcribed. The answers given by the participants to the questions included in the form were gathered under the questions, and the answers given to each question were listed together. Meaningful themes related to the study problem were developed from the answer lists for each question. The interviews with the people included in the study were recorded with a coding system in the form of voice recording in isolated environments. The answers of the participants who were asked about hospitality were recorded by coding method. In the coding, while the women living Kozani were coded as KW1 and the men coded as KM1, the women living in Bafra were coded as BW1 and the men coded as BM1.During the reporting phase of the qualitative data, quotations from the interviews were presented in relation to the findings. Thus, reliability was increased. Also, during the data collection process, a guide who could speak Greek and Romaic was used during the second visit since some words were not understood both by the researcher and the participants during the interviews in the first visit.

In the analysis of the data obtained, certain steps were followed. First, the data obtained were analyzed in the order of the questions asked during the research. Second, during the interviews, the

participants provided statements that were not related to the study topic. These views were excluded from the study, and only the answers related to the study questions were analyzed. Then, the interesting statements given by the participants during the interviews were directly quoted without changing anything. Finally, the findings were associated with each other by explaining the findings.

In the analysis of the data obtained in the study, information was received from Hicran Bozkurt whose family migrated from Greece to Turkey by compulsory migration and who visited the villages where her family migrated couple of times and established friendships with the people living there and from Dr. Metin Bağrıaçık who visited the same villages for long-term for his Ph.D. dissertation and had close friendships with the villagers.

RESULTS

Before providing the findings of the study, it is necessary to present information about the story of the study. As mentioned above, the data of this study were obtained during two separate trips to Greece in 2017 and 2019. During the compulsory migration made according to the Treaty of Lausanne, the Greeks from Kayseri-Develi'svillages of Çukuryurt, Yenice, Bakırdağı, Satı, Kiske, Hoşça, Zile and Karacaörenwere settled in Kozani and Ioannina regions in Greece. Due to the political situation between the two countries, for a long time, it was not possible for the emigrants to visit the villages where they used to live. The first visitations took place in the mid-1990s. Then in 2015, the children and grandchildren of the former residents of these villages had the opportunity to visit these villages where their ancestors lived.

As a result of the development of social media, the children and grandchildren of emigrants and the Turkish families who settled in the villages where these emigrants came from started to meet. Andreas Kostandinidis, who played an important role in these meetings, is the great-grandson of Mrs. Melo who gave birth on a ship during the migration. He is also the president of the Faraşalılar Association founded by the emigrants in Kozani. Keen on his past, he does not know Turkish. Andreas, whom the researchers met through social media, talked about the situation in Kozani and the association they founded there and their activities. In addition, they increased our curiosity by sending images from the museum they founded in the village. He talked about how emigrants from different parts of Greece come together every July and celebrated the Çukuryurtlular Day and how they sing Turkish songs and play folk dance. All these interviews aroused the desire to visit these places and examine the lives there. For these reasons, within the scope of a project submitted to the Develi Municipality by the researcher, the first visit was realized in November 2017 with a team of four people. Due to the political situation between the two countries, before the first visit, the team had worries about how they will be welcomed and how will they behave. Yet, Andreas frequently called on the road and asked how the trip was going. The team was welcomed sincerely when it arrived to the village of Vathilaykos. These showed that those worries were unwarranted.

During the first visit, it was seen that the children and grandchildren of the emigrants who were over the age of 45-50 were able to speak Turkish. Both the participants of the study and the people who were encountered during the trips stated that many of the emigrants died without learning Greek and Romaic, and spoke Turkish all their lives and missed Turkey very much.

"*My grandmother, who I grew up in the same house with, never visited her homeland again. She always remembered fondly the years she had before the migration, and when my grandfather came home, she spoke Turkish with him constantly, and when she was talking about the past, she used to say when we were in our homeland*"(Güvenç and Haris 2015: 24).

In both trips, it was seen that men and women over the middle age had installed satellite dishes in their homes to watch Turkish television and spoke Turkish amongst themselves although they knew Greek. Therefore, there were no communication difficulties during the trips. During the first trip, the people who the researchers could get information about the research from were determined with the help of Andreas. Initially only a visit to the Kozani region was planned. Yet, Mrs. Atina and Mrs. Anastatsia who were from the village of Bafrain Ioannina that was about 200 kilometers away from Kozani had learned that guests came from Turkey. So, they visited the team during the trip and insisted on the team to visit Bafra. Therefore, the village of Bafra was included in the trip. Three more people from the village of Bafra were included in the study due to the recommendation of Mrs. Atina who spoke Turkish fluently. The findings of the research are presented under two headings, namely findings based on observations and findings based on interviews.

Findings based on observations

Under this heading, observations made about hospitality since the beginning of the trip to Greece are presented. As stated in the story of the study, from the beginning of the trip to our arrival to the village of Vathilaykos, we were worried about how we will be greeted, if they will show any interest, how will be their attitudes and behaviors, and if they have an understanding of hospitality. After entering the Greek border in the early morning hours on Wednesday, November 12, through social media, Andreas frequently asked where we were, how the journey was going, and gave directions when we got close to Kozani. These had alleviated our concerns. During the trip, we made plans to go to the hotel to rest when we arrived to the village and to have our visitations the next day with the help of Andreas. When we entered the village of Vathilaykos at about 4:00 pm on the same

day, Andreas' waiting for us at the entrance of the village and inviting us to his home immediately showed us that our concerns were unwarranted. After a guest welcoming ceremony that was very similar to the Turkish tradition, Turkish coffee was served. During the coffee, the door was frequently opened, and men and women over the age of 50 entered the room, said "welcome" in Turkish (mainly in Kayseri dialect) and hugged us with longing. This made us feel like we had visited our acquaintances in Turkey that we have not seen for a long time. All of the people who came to welcome us were the grandchildren of Greeks who had migrated from Turkey and who were living in the villages of Vathilaykos and Petrena. These two villages were close to each other just like the ones in Turkey, and they showed similarities in terms of geographical structure. After the welcoming and introduction ceremonies, we were taken to our hotel at a high place in the village. We were once again astonished when the lady of the hotel showed our rooms and treated us not as customers coming to her hotel but as guests coming to her home.

When Andreas informed us about an entertainment in the evening and invited us, we went to the place of entertainment in Vathilaykos in the evening. We were once again astonished when we encountered another example of hospitality. Outside the meeting place, barbecues were lit and meats were being cooked. The entertainment was organized for us. When each of us entered the door of the place of entertainment, we were surprised that we were welcomed and hugged with "welcome" in Turkish from the villagers as if they had finally met their acquaintances after a forty-year longing. We were seated at the tables filled with all kinds of food with one of the villagers sitting between each of us. Meals and drinks were first served to us as guests. In the meantime, probably because we are Muslims, they were serving us by saying they also cooked chicken. They asked how we were, asked about Turkey, said how nice it was for us to come there, asked about the villages their ancestors came from, and with tearful eyes said *how they wished their grandmothers and fathers were there to see the people who came from the places they had lived*. When the conversation was going on, we were once again surprised to hear the Turkish song "Konyalım" from the computer. Until late at night, the interest and reverence of all the village people was on us. The night went on with the villagers dancing the halay with traditional Turkish dance music and including us to the halay.In the following days, we encountered the same hospitality during the house visits and in the cafes in the village. Friendly and respectful greetings during the visits to the Velvendos Municipality, which the village was connected to and to the Kozani Municipality, mutual gift giving serving food were also examples of hospitality. Not making us pay money when wewere leaving the hotel and saying *you are our guests, guests don't pay money* were other examples of hospitality. Seeing the same

practices in the village of Bafra in Ioannina that we visited for a day make us think that there is not much difference between us in terms of hospitality.

When we reached the village of Bafra in the evening, we were stopped at a police checkpoint when we took the intermediate roads after we lost our way. At the check point, Mrs. Atina, who invited us to Bafra, called and asked where we were. When we told her we were stopped by the police, she asked to speak with the police. She said, *"They are my guests, make them follow you and bring them to my house"*. Later, many of the villagers gathered and welcomed us in the museum of the village. They greeted us with Turkish folk songs and sang the Çanakkale (Gallipoli) folk song. These were all examples of hospitality.

Findings based on interview questions

All of the participants stated that when their ancestors migrated to Greece, they were not welcomed by the Greeks, and therefore closed themselves and established relationships and communication amongst themselves. Thus, they preserved the customs and traditions they had before coming to Greece. This is supported by the frequently made statements by the old people who were not participating in the study. *When they came here … the locals didn't accept them… the locals and the emigrants never got along. Mixed marriages were not possible. These started much later. Now, customs and traditions, kitchen and songs of both the locals and the emigrants got mixed* (Güvenç and Haris, 2015: 31).

Many of the old people said, *"We don't watch the television of the disbelievers. We have satellite dishes in our houses. We watch Turkish television."* Some of the older people criticized some of the programs on Turkish television and said, *"You are corrupted, your programs are not good at all, you have forgotten your customs and turned into disbelievers"*.

Do you visit your neighbors?

All of the participants answered the questions of "Do you have visitations in your villages?" and "Do you visit each other?" by saying, *"Of course. We visit each other and we would like to host the strangers who come from another place"*.

What is your attitude towards those who come to your village from outside? Do you entertain them in your homes?

The majority of participants answered this question using the following statements: *"Of course, that's our tradition. The people who come to our homes and village are the*

guests of God." Two people stated that *they would like to, but their homes and their situations were not okay to host them.*"

"*Of course, we do. That's how we saw it from our ancestors. I even saw my father-in-law and mother-in-law as a guest and served them as my own parents during their old age.*" BF1

"*We care about our neighbors. We visit each other. Treating the guests is important for us.*" BF2

"*We used to visit neighbors a lot, but now everyone's in front of the television, nobody needs anyone. But we old people still visit each other even though it's not often, but young people don't. Nowadays, the value given to the guest during visitations has started to disappear.*" KM8

Do you inform the family you will be visiting in advance or do you go unannounced?

All of the participants answered this question using the following words, "*We used to go announced in the past. But the current generation doesn't go on visitations that much. When they go, they inform beforehand.*"

"*We used to go to a neighbor almost every evening. There was no announcement. If the light was on, we'd go. The visitations were mostly in the evenings. It would be in the daytime, too, but it would between the women in the daytime. The current generation doesn't go on visitations that much. They almost never go. Visitations will also disappear. They have phones in their hands. They won't need anybody.*" KM7.

"*Is there any visitations left? Everybody's trying to make a living. We used to go on visitations a lot with my ancestors before. We would listen about Turkey until midnight. They would sing, they would tell stories, we would learn. They talked about their neighbors in Turkey.*" KF1.

Would you take the children to visitations?

All of the participants stated that children should be taken to visitations, but now they do not want to go because they want to stay at home because they have television and internet and they get bored during visitations. However, they said the little children are taken to the visitations.

"*Of course, we did. My parents would never leave me and my brothers at home. Because we got to know our relatives, neighbors during visitations, we got close. They used to warn us how to sit and get up, how to behave next to the old people before going to visitations. And when we came back to our house, they used to correct our mistakes by saying what we did wrong. Put it this way, visitations were also educational moments for us as a child.*" KE6.

Are there any special treats for the guests? What are they?

All the participants stated that guests are important and that it is tradition to treat them. In the past, they used to serve whatever was in the kitchen. These days, they prepare more delicious treats.

"*Whatever was in the house, it would be served, but we would serve the best. My mother even kept some special food for the guests. She didn't give those to us. She wanted to have ready treats for the guests. We waited for the guests to come and visit us so that we could eat them. Although they would just give us a taste, that would even make us happy. Nowadays, everything is plenty. They now cook special pastry and cake but they aren't just for the guests. Now, they also cook them for the family members.*" KM6

"*I serve stuffed grape leaves. Your women don't know how to make them. I see it on the television. They make them very big. Our stuffed grape leaves are thin.*" KF4

Do you have a separate room where you entertain guests? In other words, do you have a guest room?

All the participants stated that they used to have special rooms for the guests in the past. They used them to entertain guests. These rooms were kept clean and tidy as if guests would come at any minute. However, nowadays they use the biggest room of the house called the lounge to entertain guests.

"*Son, in the past, they gave more importanceto hospitality. Didn't matter if strangers or neighbors came. If a guest came, we gave them our most valuable food even if we didn't have muchand save them our best room.*" KF2

"*I still have a room in the house ready to be used as a guest room. I don't let anybody from the family in there. The present generation calls it a lounge, but the present lounges are bigger. Our guest rooms are a normal room. We decorate those rooms with the most beautiful things. We make special decorations.*" KF3.

When buying or building a new house, do you pay attention to the number of rooms thinking about the guests?

All of the participants mentioned that they used to pay great attention to the guest rooms before. However, now they do not buy or build a new house paying attention to the guest room. Instead of the guest room, they stated that the biggest room of the house, the lounge, is used to host the guests. They also stated that paying attention to having a guest room while buying or building a house is much to do with economic reasons.

"We used to make sure that there was a room to eat and drink if guests came because we wanted to have a place which was tidy all the time so that we wouldn't get embarrassed in front of the guest. Even if there were a lot of family members, one of the rooms was always saved for the guests. Nowadays, we do not use a room as a guest room, but we use our lounges for guests." BM1.

Do you have traditions of greeting guests?

Although all participants stated that there is not a special practice, they also said that the guests should be greeted at the door and sent at the door. This believed this was a practice about the importance given to the guest. If a foreigner or an acquaintance who does not know the village is coming to the village as a guest and if they know about the arrival of the guest, they greet them outside the house on the road. They advised their children to follow these customs just like they do.

"The more you greet the guest with a smiling face at the door, the happier the guest is. He feels comfortable. Therefore, I also advise my children about this. Welcome the guest at the door, smile and send them off at the door." KM5.

What does guest-hospitality mean to you?

All participants talked about the importance of guests. They stated that hospitality is about getting close, sharing, chatting, having a good time and children getting to know each other.

*"My ancestors told me that every night a neighbor was visited in the past. If they didn't go, they would call people over so that neither they nor the neighbors would be bored. We try to continue this but the new generation don'tpay much attention to this."*BM1.
"Guest is very important. He is the honor guest because he is the guest of God." BF2.
"Guest means blessing. The guest brings blessing with himself. The people today are afraid they won't have much at home. They are worried about what to offer. Was I like this during our time? We would offer whatever Allah gave but we definitely did offer. You must offer something to the guest. If you don't have anything, offer water at least." KK4.
*"If you ask the married people of today, they would say bother, and distress. In our time, guests were important. We tried to entertain them in the best way, of course, with whatever Allah gave. But women would get more tired during visitations. They probably didn't like guests that much but they didn't say anything to us. Nevertheless, they entertained them in the best way. They didn't embarrass us."*KM5.
"When our ancestors came from Turkey, these

*disbelievers always shunned them. They called them Turkish seeds. That's why they got closer with each other. They went to visitations more. Of course they went to visitations. Did they have anybody else to go to?"*KM6.

DISCUSSION

In the observations made both in the village of Ioannina-Bafra and in the villages of Kozani, it was seen that hospitality was an important value. The practices of greeting the guests with smiling faces, treating them and making them happy were observed in all the villages covered by the study. The large rooms in their homes, lounges, were used for guests and were decorated with the most beautiful items. Especially female participants stated that they use mostly the living rooms while visiting the neighborhood women during the day and even use the kitchen so that they can do work and chat at the same time. However, during the evening visits, they choose the room depending on the closeness of the guests.

As mentioned above, emigrants displayed a special kind of hospitality towards people comşng from Turkey. These were stated by Dr. MetinBağrıaçık who at different times came to these villages many times for research and Teacher HicranBozkurt who visited these regions where and to the effects of their relationships with their neighbors. The understanding that "a cup of Turkish coffee, remembered for forty years" and the understanding of the importance of guests and treating them are important in reinforcing this value. In his book called HasretinİkiYakasındanMübadeleÖyküleri, Ioanis Glavakis states that *if I live today, I owe it to my father for giving some bread and food to an Albanian* (Güvenç and Haris, 2015: 65). These words show the importance of treating guests and that the good and bad deeds are not forgotten. From the conversations made with the villagers who were not a part of the study, it was learned that some of the villagers went to Germany for work, had good neighborly relationships especially with the Turks there and visited each other. While the majority of the villagers who worked in Germany told that they improved their Turkish by speaking Turkish with their Turkish neighbors there. They said, *"You like guests, just like we do"*.

The majority of those interviewed said their ancestors had good neighborly relationships with the Turks when they were living in Turkey. When they said they had good neighborly relationships, they gave us the message that they greeted us this good because of that. During the first greetings, the majority of the old people said, *"Don't look at the problems between our countries, we are brothers, you are our guests, relax."* According to the results of the interviews, hospitality is important and they try to practice what they saw from their ancestors. Also, the new generation does not show much attention to hospitality.

Especially visitations between the neighbors have almost disappeared. The most important reason for this is seen as the spread of internet and television.

While the participants emphasized the importance of making special meals for the guests, they also stated that young people ready-made food and prefer to buy food instead of cooking. They told that they used to make stuffed grape leaves, pastry, flatbread and stew of lamb. BF1 from Ioannina-Bafra Village and KF3, KF5 from the said, "Many of our traditions are being forgotten. The young people today treat guests outside at cafes if they have money. Was it like this in the past? We made cakes, pastries, stuffed grape leaves when guests came."Güvenç and Haris (2015: 65) pointed out the change in the understanding of hospitality. They interviewed IoanisGlavakis who included life stories in his book named HasretinİkiYakasındanMübadeleÖyküleri. Glakavis said, *"Time has changed now. In order to invite someone to dinner, they have to relatives, friends or someone we need. And, this turns into a show. Plenty of food, elegant dinner sets, clothes. In the past, there was no money but there was love on the table."* It was stated that taking children to visitations was important in terms of them getting to know their neighbors, that the children were taken with them even if they did not want to. However, today children insist on not going. The study findings show that hospitality is important for getting to know each other, chatting, sharing and socialization of children and is a value that must be preserved. From the statements of the participants, it is understood that with the development of technology and the effect of social media, the importance of hospitality has decreased and importance is given to luxury and showing off.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Migrant workers' cash transfer effect on children's education

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The rationale of this study is to examine the impact of cash transfer on school attendance in Indonesia and whether the proportion of school children receiving cash transfer and those not receiving cash transfer is having the same effect. Using the data of Indonesia's Family Life Survey-5 (IFLS-5) in 2014 covering 19 provinces with total observations of 16.024 household obtained from Rand Corporation and field interview held in 2015, the multiple cross section regression model was applied by using 2SLS and Probit regression method to examine the effect of cash transfer as exogenous variable, and individual vector, parents, and household as control variables on school attendance of children as endogenous variable. The main finding is that the cash transfer has significant positive effect in increasing children's school attendance and the expenditure for children education. Nevertheless, the children from household receiving cash remittance tend to have lower school attendance vis-à-vis children from household not receiving the cash transfer. As policy considerations, it is advised to anticipate the migration effects when evaluating the effect of cash transfer on children's school attendance or when updating migration policies and to improve the availability of facilities and basic infrastructure for school age children.

Key words: Cash transfer, school attendance, household expenditure, education, children.

INTRODUCTION

The World Bank Report as of November 2017 shows that there are 9 million migrant workers from Indonesia. Of that amount, 53% of this are working in informal sectors such as maid while 47% baby are working in formal sectors (Word Bank, 2017). This phenomenon affects mainly low skill workers as 60% of the workers have not completed high school so that they are unable to compete for the limited jobs with high productivity. The

World Bank report also notes that on November 2017, 19% are working in agriculture, 18% in construction, 8% in manufacturing, 6% as nurses for elderly, 4% in hotel/restaurant, 2% as driver and 0.5% working on cruise ships. The World Bank report also mentioned that cash transfer is contributing to improve the long term life of the migrant worker and their families. This is due to the migrant worker obtaining income six fold higher

compared to working at home or domestically. Forty percent of migrant households utilize their cash transfer money for education, 15% for business investment and more than 20% for saving accounts. The Global Knowledge Partnership on Migration and Development (KNOMAD) in its report entitled Migration and Remittances; Recent Developments and Outlook as of April 2018, recorded that Indonesia is part of 10 biggest countries receiving cash transfer from overseas amounting to $9 billion and standing at 10th—rank (KNOMAD, 2018). First rank is India with total amount of $69 billion, China ($64 billion), and third rank is the Philippines ($33 billion).

The cash transfer obtained by households originated from migrant workers is part of the strategy for households to ensure sustainability of their income. In the short run, the fund is used to purchase items such as buying food, clothes, and health needs that enable households to maintain their purchasing power. Whereas if the fund is used for investment financing such as education , in the long run it will increase household expenditure that will mitigate poverty (Bastagli et al., 2016; Ruiz and Vargas-Silva, 2010).

Cash transfer in our observation is defined as money remitted by child, parent, or spouse domicile in different countries as proxy of migration. The purpose of migration among others is to secure the income of the migrant workers and their families to stay at home (Stark and Bloom, 1985). A plethora of research showed that cash transfer originated from migrant overseas has a capacity to increase the number of children entering schools. There two ways the fund received from cash transfer is utilized. First, the fund can be utilized for any needs just like the fund received from other sources of income. Second, fund from cash transfer received by different socioeconomic backgrounds and different house members will be used differently (Maitra and Ray, 2003; Waidler et al., 2016). This is due to constraints such as migration cost, the fund from cash transfer is not received by low income category (Taylor, 1999). The cash transfer received from migrant workers in overseas has been continuing to increase (Bank Indonesia, 2019). Considering both opinions, the question needs to be further analyzed as whether cash transfer from migrant workers in Indonesia affects education represented by the number of school -age children enrolling in school.

Based on the above and data sourced from Household Survey in Indonesia the purpose of this study is to confirm and analyze the effect of cash transfer from migrant workers on numbers of children attending school. Second, to confirm whether proportion of school children receiving cash transfer and proportion of school children not receiving cash transfer are having the same effect. To the best of our knowledge there is scarce research on the impact of cash transfer on school attendance of children in primary and secondary schools in the whole country or nationwide. This study is only limited to several rural areas of the province. The contribution of this study among others is to observe meticulously how significant is the effect of cash transfer on household children education in Indonesia. The results of the study will be utilized as reference for central government and local government in designing their policies particularly on improving the facilities for education as well as to increase economic growth of the country. Academic wise, this study can be used as a tool for comparative study with other countries such as India, the Philippines, Burma and other migrant worker contributors.

LITERATURE REVIEW

This section discusses the theories and reviews from various research on effect of cash transfer. The previous theories on migration in general have not studied cash transfer as separated topics from migration. But the New Economic of Labor Migration (NELM) concludes that the decision to migrate is based on common initiatives specifically between the migrant worker candidates and their families. So, this theory does not opine that family is a separate entity from the migrant worker candidate. It is regarded as an unity that creates efficient and flexible relationship among them. Furthermore, the approach is shifting the focus on migration theory on 'individual independency' to depend among others and view migration as 'strategy based on various considerations' and not decision or optimism without limit (Stark and Bloom, 1985). The fund received from cash transfer will be used for improving income, as fund for new economic activity, and as guaranty for precaution motive of loss of income and production failure. The cash transfer from migrant workers is also potent for propelling development dynamics through relaxing production constraints and investment faced by the household in the underdeveloped countries (Taylor, 1999).

The motive of migrant workers to remit part of their income is based on various factors such as the amount of income, the willingness to distribute their 'hard work' income to their families at home including the ease of remitting the funds. As Lucas and Stark (1985) stated that there is no theory specifically that is discussing cash transfer comprehensively, but they notes that the motive of cash transfer is based on three reasons.. First, the altruism or caring for the families left at home; second, for benefitting the migrant worker himself or expecting profit or return such as to be invested and to be secured by their families as savings to be used by the returned migrant workers; third, the combination of both or known as NELM motive whereas the migrant workers and their families are bound by agreement to share the certainty of the sustainability of the income. There are two reasons supporting this motive which are investment and risk. For instance, the education invested by the head of the households for their children will create higher return for

the household instead of investing the funds for their son-in-law, daughter-in-law or spouse. The second reason is to guarantee against the financial and insurance market imperfection by sending members of their families as diversification of sustainability of family income. For instance, the drought and hostile weather that causes harvest failure or unstable prices in rural areas (Taylor, 1999).

Overseas migrants in Indonesia total 3.7 million (Bank Indonesia, 2019). Migrant workers from Indonesia are categorized as low skills workers and those working in informal sectors such as maid, and babysitters. Only a small fraction of them are working in plantation or manufacturing sectors as unskilled workers. Most are working in Middle East and South East Asia countries (BNP2TKI, 2015). The cash transfer from migrant workers can increase the expenditure of the households but the pattern of the utilization is based on the level of income category. For those categorized as low income, the cash transfer is used for mostly on food consumption. For higher income household, the fund is used for investment such as education, health, housing, or increase of household assets (Adams and Cuecuecha, 2013). The usage of cash transfer for education and housing does not result in immediate impact on improving the economy of the household of the migrant workers (Taylor, 1999). The international cash transfer is also functioning as an effective informal social safety net (McKay and Deshingkar, 2014). Koechlin and Leon (2007) stated that in the early stages of migration only households categorized in the higher income distribution level are able to migrate as the costs for migration is relatively high. As a result, only those with the higher income are receiving the cash transfer funds. But, as time goes by, the earlier migrant workers will provide information and assistance to the new coming migrant workers that create new 'migrant center' in overseas. The continuation of the process enables those from low income distribution category to migrate and receive cash remittance.

McDade (2010) and Hernandez et al. (2012) reported that the households receiving cash transfer are having higher impact on increasing the number of children entering school. This finding is also related to findings by Yang and Martinez (2006) who conclude that cash transfer is able to support households receiving cash transfer to overcome the 'financial shocks' as experienced during the financial crises in 1997 so it is utilized as an informal safety net.

The effect of migration and cash transfer on the education of the children of the migrant workers is examined by Davis and Brazil (2016) and McKenzie and Rapoport (2006). The result of their study concluded that the absence of parents may inhibit the education process but the existence of cash transfer may support their children. The students from the migrant households are actively prioritizing the education to reach the prospect of migration in the future, and those coming from an ample

migrant community tend to migrate as their age matures enough to migrate. The indirect effect is that the student does not appreciate the quality of education due to the opinion that the skills obtained from education are not sufficient for them for success in migration thus they disregard education albeit receiving cash transfer. Children of 7 to 12 years of age enroll in school is are close to 99%, but the higher the level of education, the children enrolling in school deteriorated from 95% for children age 13 to 15 years and decreased to 72% for 16 to 18 years (BPS, 2019). A study done by Bougas (2016) on children of women migrant workers from Malang, East Java, Indonesia found that their children lost attention of their parents specifically their mothers in supporting their formal education. Motivation to encourage their children to study is not obtained by their children as their mothers work overseas.

Basrowi (2020) studied migrant workers and former migrant workers in Lampung province-Indonesia and concluded that remittances had a positive and significant impact on improving the family's economy, children's education duration, and children's health level. Other studies concluded that only a small fraction of the cash transfer is used for children's education as a major part of the cash remittance allocated for consumptive usage. Based on the review above, the hypothesis developed for the study to be executed is that cash transfer obtained from migrant workers working overseas has significant impact to increase the number of children's school attendance. This result contradicts the fact that the children's parents left their children for working overseas to continue their children's formal education.

METHODOLOGY

This study is based on cross section data sourced from The Indonesian Family Life Survey (IFLS) fifth wave year 2014 of RAND Corporation. The study covers 19 of 33 provinces in Indonesia and is considered valid to represent nationwide. The Indonesian Family Life Survey (IFLS) is an on-going longitudinal survey in Indonesia. The sample is representative of about 83% of the Indonesian population and contains over 30,000 individuals living in 13 of the 27 provinces in the country. The map below identifies the 13 IFLS provinces in the IFLS.

The first wave of the IFLS (IFLS1) was conducted in 1993/94 by RAND in collaboration with Demographic Institute, University of Indonesia. IFLS2 and IFLS2+ were conducted in 1997 and 1998, respectively, by RAND in collaboration with UCLA and Demographic Institute, University of Indonesia. IFLS2+ covered a 25% sub-sample of the IFLS households. IFLS3, which was fielded in 2000 and covered the full sample, was conducted by RAND in collaboration with the Population Research Center, University of GadjahMada. The fourth wave of the IFLS (IFLS4), fielded in 2007/2008 covering the full sample, was conducted by RAND, the Center for Population and Policy Studies (CPPS) of the University of GadjahMada and Survey METRE. The fifth wave of the IFLS (IFLS-5) was fielded 2014-15. On the fifth wave, the observation totals 16.024 households.

The IFLS surveys and their procedures were properly reviewed and approved by IRBs (Institutional Review Boards) in the United States (at RAND) and in Indonesia at the University of GadjahMada

Table 1. Statistical descriptive of household with cash transfer and household without cash transfer.

Variable	Receive cash transfer	Not receiving cash transfer
Proportion of food consumption	0.488	0.512
Proportion of education expenditure	0.086	0.055
Proportion of health expenditure	0.021	0.019
Proportion of housing expenditure	0.135	0.136
Proportion of other expenditure	0.292	0.286
Number of family member	3.216	3.470
Children age 0 to 17 years old	0.986	1.199
Adults age 18 t0 59 years old	1.882	2.071
Elderly age over 60 years old	0.369	0.215
Age of head of household	43.070	41.425
Head of male household	0.781	0.899
Maximum year of schooling of household member	13.274	12.049
Live in the cities	0.752	0.669
Number of observation	2.509	4.257

Source: Calculated based on IFLS-5.

(UGM) for IFLS3, IFLS4 and IFLS5, and earlier at the University of Indonesia (UI) for IFLS1 and IFLS2. Thus all requirements for consent of adults and children were met and approved by those IRBs before fieldwork could begin.

In 2012, Survey METER fielded a survey based heavily on the RAND IFLS in the eastern provinces of Indonesia that were not in the RAND IFLS. Though it is not supported by RAND, lthe IFLS EAST is listed as a sister survey that may be of interest to RAND IFLS users. It is assumed that each cash receiving household is receiving the exact amount as reported by them during the survey. The household expenditure is used as proxy for income based on reasons as follows, first high degree of income data losses vis-à-vis expenditure; and second, low correlation between income and expenditure data. Spearman correlation test is 0.56 indicating that there is weak correlation between income and expenditure. Education in this study is to observe the number of children from 13 to 18 years which is categorized as ages for mandatory primary and secondary school years. Using probit method based on studies by Acosta et al. (2008) and Bucheli et al. (2018), the model is formulated as below,

$$A = \lambda + \beta X_i + \lambda P_i + \Phi C_i + \beta R_i + \epsilon_i$$

A representing probability of children school attendance , and X_i is individual vector (dummy of child age, gender, disabled child or not, living with parent or not), P_i is parent characteristics (father's year of schooling, mother's year of schooling, working mother or not, mother is head of family or not), C_i is household characteristics (number of siblings, order of birth, per capita monthly expenditure without cash transfer, and whether households reside in the city or not) and R_i is cash transfer per capita per month. Parents' education is a binary variable of four categories: completed primary school, completed junior high school, completed senior high school, and completed college or university degree.

RESULTS AND DISCUSSION

In this study, we compare the households receiving cash transfer and those not receiving cash transfer (Table 1).

Table 2 explains that the households receiving cash transfer have higher proportion of education expenditure vis-à-vis the households not receiving cash transfer. This is consistent with a study by Cabegin and Alba (2014); Mahapatro et al. (2015); and Quisumbing and Meniven (2010). Age of the head of household receiving cash transfer is higher than that not receiving cash transfer, indicating that the head of the household receiving transfer is no longer productive, so need to be supported by cash transfer. The table also shows higher proportion of household residing in the cities vis-à-vis rural areas indicating that the ease of accessing bank in the cities for receiving cash transfer from overseas. Higher proportion of maximum year of schooling of household members receiving cash indicates that the household members are well educated and have higher income that enables them to overcome the cost of migrating to overseas.

In Table 2, there is a significant positive correlation between income without cash transfer and education of head and members of households. This means that the higher the education of the head and member of the households, the higher their income. Positive correlation of the male head of households indicates that his income is higher than his female counterpart. Positive correlation of households residing in the urban/city indicates that their income is higher than their counterpart in the rural areas. Positive correlation of retiree/pensioner indicates that the cash transfer received by households serving at least one retiree/pensioner is higher than households without retiree/pensioner. So serving more retire/pensioner will significantly increase the cash transfer received by households that are regarded as unproductive and need to be supported financially. Households having better household head/member education will definitely receive higher income. Based on this result, it is concluded that those who are migrating

Table 2. The correlation between characteristics of household and income and between household and cash transfer.

Variable (independent)	Income	Cash transfer
Income		0.0108***
Children	-0.0861***	0.002
Household size	-0.1085***	-0.0161***
Elderly	-0.129***	0.0166***
Age head	-0.0139***	-0.0117***
Male head	0.0686***	-0.130***
Primary school	0.032	0.008
Junior high school	0.0587*	-0.008
Senior high school	0.258***	0.0347***
College/University	0.692***	0.0403***
Urban/City	0.210***	0.0160***
Maximum year of education	0.0380***	
Retired/Pension		0.0573***
Constant		0.469***
Observations		

***Significant at 1%, ** Significant at 5% and *Significant at 10% level of confidence.
Source: Calculated based on IFLS-5.

Table 3. Correlation between Expenditure Proportions and Cash Transfer and Income

Variable	Proportion of expenditure				
	Food	Education	Health	Housing	Other expense
Cash transfer	-0.123	0.246***	-0.0063***	-0.272***	0.152*
Income	-0.037	0.0813***	0.00098	-0.00715	-0.001470
Observations	13402	13801	13802	13902	13502

***Significant at 1%, **Significant at 5%, *Significant at 10% level of confidence.
Source: Calculated based on IFLS-5.

and transferring cash are definitely not from a low income category.

The increase in monthly expenditure based on Table 3 is having positive correlation with education expenditure; whereas for other proportion of expenditure it is not significant. For cash transfer as mentioned by Adams and Cuecuecha (2013), the increase in cash transfer is having a negative significant impact on housing investment; whereas there is significant positive correlation with education expenditure and other utilities expenditure such as transportation, durable goods, clothes, etc. Positive results on education expenditure are consistent with other previous studies in other countries whereas cash transfer is mostly utilized for investment including education (Cabegin and Alba, 2014). The result is consistent with the economic theory of permanent income hypothesis-cash transfer regarded as transitory income. This type of income is not spent for today's consumption but spreads along one's individual lifetime. The transitory income tends to be used as investment or saving.

Based on Table 4, school attendance of children receiving cash transfer is higher as they have less supervision from their parent working overseas and tend to work overseas in the future after leaving school. Davis and Brazil (2016)–reported that the absence of fathers causes the children not to be motivated to go to school and receiving cash transfer motivates them to become migrant workers too. Acosta et al. (2008) stated that cash transfer significantly and negatively affects school children's attendance in rural area in El Salvador. The age of the children receiving cash transfer is higher than those non receiving cash transfer, there is no difference in number of individuals between male and female children, mothers who are also head of household tend to have more opportunity to receive cash transfer, probably because their husbands are migrant workers.

Table 5 indicates that school attendance is not dominated by children's gender whereas disabled children—have more significant school attendance. Farther year of schooling has significant and positive impact in increasing children's school attendance. This

Table 4. Descriptive Statistic of School Enrollment of Children age 13 to 18 years old.

Variable	Cash transfer		
	Not receiving	Receiving	t-stat
School attendance	0.889	0.433	3.829*
Age	15.345	15.478	-7.281*
Male child	0.527	0.528	-0.043
Disable	0.035	0.022	1.676
Father year of school	8.657	8.458	2.543*
Mother year of school	8.293	7.734	4.579*
Working mother	0.437	0.532	-0.447*
Mother (head of HH)	0.043	0.147	-10.367*
Siblings	0.825	0.865	-1.157
Eldest child	0.973	0.901	9.463*
Per capita expenditure (million Rupiah)	1.140	1.012	0.722
Residing in urban/city	0.597	0.554	2.679*
Residing in own house	0.842	0.877	-3.281
Observations	3.121	1.731	

*Significant at 5% level of confidence
Source: Calculated based on IFLS-5.

Table 5. Correlation of cash transfer on child age of 13 to 18 years old school attendance.

Variable	School attendance (Probit regression)	
	Coefficient	Standard error
Cash transfer (R)	-0.0888**	(0.041)
Individual characteristics (X)		
Age 16-18 years	-0.753***	(0.041)
Male child	-0.047	(0.059)
Disable	0.633***	(0.140)
Parent characteristics (P)		
|Father Year of Schooling	0.0378***	(0.008)
Mother Year of Schooling	0.017	(0.008)
Working Mother (yes= 1)	0.576***	(0.050)
Mother |Head of Household(HH) (Yes=1)	0.144*	(0.084)
Household characteristics (C)		
Siblings	0.0872***	(0.033)
Eldest child (Yes=1)	-0.015	(0.044)
Living with parent	-0.758***	(0.101)
Monthly expenditure	0.009	(0.032)
Living in the Urban/City (Yes=1)	0.118**	(0.052)
Living in own house	-0.007	(0.033)
Constant	0.780***	(0.342)
Observations	4.542	

***Significant at 1%, ** Significant at 5%, Significant at 10%.
Source: Calculated based on IFLS-5.

may be due to 'patriarch culture'–being strong in which father is the ultimate decision maker/ head in the household/family including in children's education matters. Working mothers and mothers as head of house also have positive and significant impact –increasing children's school attendance. Therefore, the role of the mothers is also financial, to make the children focus in school without necessity to help parents to make a living.

As found in previous topics, the households residing in urban areas or cities are able to increase children's school attendance. Cash transfer only is not sufficient without the availability of sufficient facilities and infrastructure. This finding is also consistent with a study by Febriany and Suryahadi (2012) and The World Bank (2011).

Conclusion

This research sought to provide an in-depth analysis on the effect of cash transfer on children's education in Indonesia. The study found that cash transfer has a significant impact on the increase in children's school attendance and education expenditure, but the children from households receiving cash remittance tend to have lower school attendance vis-à-vis children from households not receiving cash transfer. Referring to permanent income hypothesis, up to certain degree cash transfer is categorized as transitory income. Cash transfer affects the consumption pattern of receiving households.

Based on the conclusions above, the policy recommendation to ensure the benefits derived from cash transfer is effective by anticipating the migration effects when evaluating the effect of cash transfer on children's school attendance or when updating migration policies. The strong positive effect of cash transfer may overcome the negative effect of cash transfer on children's school attendance that eventually will increase cash transfer inflow and increase household investment on children's education. The investment on education can be only effective if followed by the availability of adequate supporting facilities such as basic infrastructure and availability of good schools, predominantly in rural areas. Therefore, the improvement and increasing of the number of facilities and infrastructure need to be continuously executed. The limitation of this research is the unavailability of respondents' data from East Indonesia zone; whereas it is known that part of migrant workers doing cash transfer reside and originate from East Indonesia Zone. For future study it is advised to add interaction variable or longitudinal data to detect the effect of cash transfer comprehensively.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Improving the Thai students' ability in English pronunciation through mobile application

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Accurate and clear pronunciation is one of the most desirable features to achieve a successful communication. However, in Thailand, the pronunciation seems to be neglected in most skills. Mostly, students were forced to learn grammar and structure only. Consequently, Thai students, especially in a remote area where English native speakers were insufficient, were found unable to pronounce English words correctly. To provide chances for students in a remote area, this paper aims to examine English pronunciation by students in a remote area and to evaluate the students' performance in English pronunciation using Google translate mobile application. The 24 university students who experience the learning incorporated mobile application were selected by a selected purposive sampling process. The pre and post-pronunciation tests were obtained, together with, semi-structured interviews. The finding indicated that all students' pronunciation was significantly improved. All students revealed that mobile application helped them improve their pronunciation ability, even the one who has limited English pronunciation ability.

Key words: English pronunciation, a remote area, mobile application, Google translates.

INTRODUCTION

It is undeniably that English has been internationally used by people from all over the world. People attempt to develop English competency for communication in daily life. English communication skills are one of the most subjects highlighted and emphasized. To enter the business, international employers need their employees to learn to understand and be able to use English fluently and effectively (Lee, 2009, p.16). In the near past, Brown (2000) found that a second leaner meet some problems, because as a native language affects his foreign language, especially, in adulthood. Students, in Thailand,

mostly focus on grammar and structure rather than speaking and listening. The situation is even worse in a remote area where English native speakers are insufficient. There have less chance to learn proper and accurate pronunciation. To provide more chance for students in a remote area to learn an accurate English pronunciation produced by English native speaker, mobile application, Google Translate, is an alternative to help them achieve in learning and practicing pronunciation.

Laurea (2015) stated that pronunciation is one of the

most abandoned features of English language learning as nearly Thai English teachers forced their students to study grammar and vocabulary, to be in productive skill activities and become knowledgeable in listening, reading, and writing. Moreover, it is reported that the mother tongue has clearly influenced learning foreign language pronunciation where native language and foreign language are in conflict, errors are expected to be assigned by foreign learners.

Nowadays, the expansive uses of mobile technologies are speedily providing numerous resources, together with interactive applications, suitable for autonomous language learning opening up to new contexts for learning (Pachler et al., 2010). Technology contributes variety options as making teaching more motivating and also making teaching more productive in terms of improvement. There has been a variety applicable to various degrees of the language learning situation. Some are useful for testing and distance learning, some for teaching writing and reading. There are a number of reasons why teachers and students are able to go towards new technology.

To facilitate the pronunciation of difficult words in English, mobile applications are used to help students read out loud and to provide even more effective. Hence, the use of the mobile applications for improving students' ability in the pronunciation of difficult words was applied in this study, especially, for those students who were in a remote area and had insufficient opportunity to communicate to the English native speakers. This research aims to help students in a remote area improve their English pronunciation through mobile application.

LITERATURE REVIEW

Pronunciation

Pronunciation is the act or result of sound production in speech and pronunciation, accent and intonation. This section to mention about the theories of pronunciation, factors of pronunciation, and consonants and vowels.

Theories of pronunciation

Pronunciation is sounds are expressed by speakers to mark people in the same education, social and economic status. According to Dalton and Seidlhofer (1994), pronunciation is able to be categorized into two ways.
First, the sound is important as it is used as part of a code of aparticular language. Therefore, individual sounds of English, Chinese, Thai, and other languages can be discussed. In this regard, we are able to express about pronunciation as the repetition and production of sounds of utterances.

Second, the sound is important because it is used to complete meaning in the context of use. Hence, the

combined codes with other featuresis able to make communication achievable. Hence, we are able to discuss pronunciation with reference to acts of speaking (Dalton and Seidlhofer, 1994).

The most common features we have to associate in studying pronunciation are the theoretical context of pronunciation and the system of pronunciation. Catford and Cunnison (1992:201) characterized the contrastive function of phonemes is that there are sounds that distinguish one word to the other e.g. pin /pɪn/ differed from bin /bɪn/ by the distinctive initial consonants /p/ and /b/. The sequential function means that the phonological form of a word consists of a sequence of phonemes and that every phoneme consists of a set of (simultaneous) distinctive features (1992: 201). The minimal function of phonemes means that phonemes are the smallest units that are unable further divided (Roach, 1992). Phonemes can be divided into two main categories, vowels, which are subdivided into monophthongs and diphthongs, and consonants, which are subdivided into voiced and unvoiced (Macháčková, 2012). Figure 1 shows the English phonemes.

Factors influencing pronunciation

In the non-native speaker's communication, the pronunciation problems may have occurred due to the sounds exists in the mother tongue but may not be in the target language.

Several factors influenced the pronunciation of Thailand learners of English. First, the sound of Thai language may not exist in English pronunciation. Thai students may have employed the first syllable which may not exist in English language. Finally, the Thailand learners have not differentiated between the spoken and written form as in Thailand the spoken and written forms resemble and this goes hand in hand with the word salmon is usually pronounced as /sælmən/ instead of /sæmən/ by Thailand learners (Macháčková, 2012).

Consonants

According to Ariyapitipun (2003), Thai consonant sound has been classified with regard to (1) manner of articulation; the method that consonant is articulated (2) place of articulation; where the vocal tract the obstruction of the consonant occurs, and which speech organs are involved and (3) voicing; the vibration of the vocal cords (Ariyapitipun, 2003). Hence, consonants are different from one another at least in these ways. There are 21 consonant letters in English with 24 consonant sounds and 2 semivowels. On the other hand, there are 44 Thai consonants which produce 21 initial consonants sounds and 6 final consonant sounds. Furthermore, Thai consonants are classified into 3 classes; low, middle, and high. There are 24 low-class consonants, 9 middle-class

Figure 1. English phonemic chart.

consonants and 11 high-class consonants that determine vowel sounds (Narksompong, 2007).

Ariyapitipun (2003) states that the initial consonant cluster, the clusters in English are the combined sound at the beginning of the words. English initial clusters mostly begin of 2 consonants. A small number of initial clusters of 3 consonants start with /s/ and followed by /p/, /t/, or /k/. Then followed in turn by /r/, /l/or /w/ while the Thai language initial consonant is structured with only 2 consonants.

The combination of sound found at the end of the English word is called final consonant clusters. There is no 3 consonant combination like /spr/ at the end of a syllable. In English, grammatical endings create many final clusters, for example, the past tense ending /t/ when added to 'glimpse' creates the four-consonant cluster /mpst/ and plural ending /s/ when added to 'text' creates the four-consonant cluster /ksts/ (Avery and Ehrlich, 1992; Narksompong, 2007). Conversely, there are no final consonant clusters in the Thai language.

Vowels

A vowel is a sound which produced with no closure of throat or mouth at any point where a unit of the sound system occurs. In Englishlanguage, a vowel is a letter (sound) of the English alphabet that is not a consonant. The Thai vowel system is consisted of 18 monophthongs and 16 diphthongs. The long and short length of vowels plays a significant role in the meaning of words. There are many more vowel sounds in Thai than the English language. It is very necessary to pronounce vowels unmistakably. (Ariyapitipun, 2003).

In the English language, the vowel sounds are articulated with the vibration of the vocal cords but there is no difference in the manner of articulation, so it is about where the airflow is obstructed. Vowels in English

are mostly monophthongs and diphthongs (Narksompong, 2007; Ariyapitipun, 2003).

Monophthongs: English monophthongs are /i/ as in 'peel', /ɪ/ as in 'pill', /e/ as in 'pail', /ɛ/ as in 'pet', /æ/ as in 'pat', /a/ as in 'pot', /ə/ as in 'putt', /ɔ/ as in 'Paul', /o/ as in 'pole', /ʊ/ as in 'pull', and /u/ as in 'pool' (Narksompong, 2007). Monophthongs in Thai also have a short and long length in vowel sounds. The dash(-) indicates the position of the initial consonant after which the vowel is pronounced (Ariyapitipun, 2003).

Diphthongs: Ariyapitipun (2003) reveals that only three genuine diphthongs exist in English language. The first two diphthongshave been articulated by gliding the tongue towards /ɪ/ to create / aɪ/ as in 'cite' and /ɔɪ/ as in 'boy', and another one is produced by gliding the tongue towards /aʊ/as in 'how'. On the other hand, Thai diphthongs in vowel system are called "falling diphthongs" because they have been produced by gliding down from high vowel positions to the low vowel position.

Stress

Stress is where muscular energy is given to some syllables about others. To stress syllable, a syllable is articulated by forcing air out of the lungs relative to others. Hence, a greater amount of energy has occurred on stressed syllables than the unstressed syllables (Narksompong, 2007; Ladefoged, 1982).

Ohata (2004) established that the stress syllables are primarily making the vowels lounders and longers which is referred to as "stressed accent". Likewise, the loudness and length, in case of a word or a syllable are articulated with a high pitch, it will be recognized as stressed. Stress occurred when a syllable is pronounced with a high emphasis in order to give it more prominent than the other syllables surrounding. The Thai language pattern is absolutely different from English pattern. Thai syllables are produced in a certain fixed tone which is equal weight

and timing in each syllable. Moreover, the tonal pitch is located on a single syllable. The high and low pitch in the Thai language is irrelevant on tone, not stress. There is no evidence to refer to have a stress pattern in Thai language (Narksompong, 2007; Smyth, 2001).

Intonation

English intonation refers to the rising and falling voice in a speech that can be used to convey the meaning of sentences. The intonation can be addressed in order to change the function of a sentence, changing into a simple statement into an interrogative, a question, or into an exclamation. Intonation in English language is a form of rising and falling tone of voice at the sentence level containing feelings, attitudes, and emotions of the speakers (Ariyapitipun, 2003). Contrarily, there is no intonation in Thai language patterns. There seems to be tonal but not intonation. Each word contain its tone but it will never change syntactically because if the tone changes, the meaning will be changed as well. Thus, in Thai, the tone will not be changeable wherever they occur in a sentence (Narksompong, 2007).

Technologies

Recently, technologies, computer, internet, blog, podcast, have been emerged in our daily life, especially, in teaching and learning. There are varieties of technologies that can be used in learning. Shyamlee and Phil (2012) indicated that technology has played a prominent role in English language learning. Hence, the development of information technology may have been able to provide an innovative pattern to explore the new teaching model.

Graddol (1997) states that technology plays a significant role in the globalization-era. It involves in culture, work, and education. English language has rapidly increased using since 1960. Recently, the role and status of the English language are the prominent features involved in all sectors; business sectors, culture sectors, education sectors and so forth. English language has been used in order to achieve communication. To helps students to get involved and learn according to their interests, it has been tested effectively and is widely accepted for teaching English in the modern world by adopting technology in English language learning.

Mobile applications in language learning

The expansive using mobile technologies have established a magnificent possibility in the development of language learning. Mobile-assisted language learning (MALL) has been implemented since 2001 and contributes to the feedbacks from many MALL developments. Uther et al. (2007) have established the platform to move beyond simple text drills. Mobile applications have been used in many ways in order to improve language learning. This paper aims to employ a mobile application to improve Thai students' ability in English pronunciation, especially, the ones who are in the remote area.

METHODOLOGY

Research design

Qualitative and quantitative methods were adopted in this research in order to gather in-depth information.

Population and participants

The population in this study was English students at Rajamangala University of Technology Isan, SakonNakhon campus. The participants were 24 second-year students in English for International Communication program. The participants were selected by purposive sampling. Each participant took a pre-pronunciation test in order to examine their pronunciation before using the Mobile application. Their pronunciation tests were recorded by using the Smart Voice Recorder application.

Instruments

There were 5 instruments in this study as follows:

Pronunciation test

The pronunciation test was a set of vocabulary that was found mistakably and inaccurately pronounced by many of Thai people. The researcher used this set of 25 words for the pronunciation test of the participants as shown in Table 1.

The participants have been examined their pronunciation by reading out loud and the pre-test and post-test would have been recorded by using Smart Voice Recorder application. The pre-test would have been done before the participants using mobile applications: Google Translate.

Mobile application

The Google Translate application has been selected as an instrument to improve students' abilities in the pronunciation of difficult words. Google Translate is a free multilingual machine translation service developed by Google, to translate text, speech, image, sites, or real-time video from one language to another (Figure 2). It offers a web interface, mobile apps for Android and iOS, and an API that helps developers build browser extensions and software applications. Google Translate supports over 100 languages at various levels and as of May 2013, serves over 200 million people daily (Wikipedia, 2006).

Audio record

Smart Voice Recorder (version 1.8.0) application was selected as an instrument to record pronunciations of the participants, when they will test their pronunciation. We have used this application to record pronunciation tests of the participants and save files into our computer to analyze participants' abilities in the pronunciation of

Table 1. Vocabulary pronunciation tests.

Vocab	Phonetics of UK	Phonetics of US
Almond	/ˈɑː.mənd/	/ˈɑːl.mənd/
Busy	/ˈbɪz.i/	/ˈbɪz.i/
Cover	/ˈkʌv.ər/	/ˈkʌv.ɚ/
Chaos	/ˈkeɪ.ɒs/	/ˈkeɪ.ɑːs/
Error	/ɛrə/	/ɛrə/
Genuine	/ˈdʒen.ju.ɪn/	/ˈdʒen.ju.ɪn/
History	/ˈhɪs.tər.i/	/ˈhɪs.tɚ.i/
Island	/ˈaɪ.lənd/	/ˈaɪ.lənd/
Juice	/dʒuːs/	/dʒuːs/
Leopard	/ˈlep.əd/	/ˈlep.ɚd/
Owl	/aʊl/	/aʊl/
Psycho	/ˈsaɪ.kəʊ/	/ˈsaɪ.koʊ/
Purpose	/ˈpɜː.pəs/	/ˈpɜː.pəs/
Salmon	/ˈsæm.ən/	/ˈsæm.ən/
Schedule	/ˈʃedʒ.uːl/	/ˈskedʒ.uːl/
Suite	/suːt/,/sjuːt/	/suːt/
Temperature	/ˈtem.prə.tʃər/	/ˈtem.pɚ.ə.tʃɚ/
Value	/ˈvæl.juː/	/ˈvæl.juː/
Vegetable	/ˈvedʒ.tə.bəl/	/ˈvedʒ.tə.bəl/
Dessert	/dɪˈzɜːt/	/dɪˈzɝːt/
Singer	/ˈsɪŋ.ər/	/ˈsɪŋ.ɚ/
Chocolate	/ˈtʃɒk.lət/	/ˈtʃɑːk.lət/
Effect	/ɪˈfekt/	/əˈfekt/
Isle	/aɪl/	/aɪl/
Desert	/ˈdez.ət/	/ˈdez.ɚt/

difficult words (Figure 3).

Semi-structured interview

To achieve students' attitudes towards learning how to pronounce the difficult words through the Google Translate application, a semi-interview had proceeded the last post-test. Then, the participants all 24 were interviewed in order to find out about their pronunciation reactions. Afterward, Smart Record was used to confirm that all the information was collected.

Grading criteria for English pronouncing test

Rubric of pronunciation test

Research questions: This study was guided by the following research questions (Table 2):

Question 1: Can mobile applications help students improve their pronunciation of difficult words?
Question 2: What are the students' attitudes towards using Google Translate for improving their pronunciation of difficult words problems?

Procedures of study

To improve participants' abilities in pronunciation, the procedures used in the study will be as follows:

Step 1: (Week 1) in the first week, All participants were asked to download Google Translate application. All participants were trained to use Google Translate application in order to listen to the accurate pronunciation. Participants were examined by using pronunciation tests. Audio-record was used to obtain their pronunciation abilities. Each participant took about 5 minutes to record their pronunciation. All recorded file was transcribed to investigate the pronunciation abilities.

Step 2: (Week 2-5 constitutively) from this week onwards, participants were practiced by using Google Translate application. They have to put the vocabulary given into Google translate. Then press icon speaker to listen to the word pronunciation. Then, then have to imitate the sound from Google Translate application. They were asked to practice 3-4 times a week. During this period, all participants were assigned to keep the diary. They had to report the time duration and the frequency of using Google Translate.

Step 3: (Week 6 Post-Test) this week, all participants were asked to examine their pronunciation abilities. The audio-record was used to collect data. All post-tested recorded file was transcribed. Both pre-post pronunciation transcripts were analyzed by comparing them with the pronunciation from Google Translate. Diaries were collected the participants who gather the outstanding or interesting data were interviewed by using semi-structured.

Data collection

In pronunciation tests of the participants, they had to tests 25 words of the difficult words. Afterwards, the researcher checked the
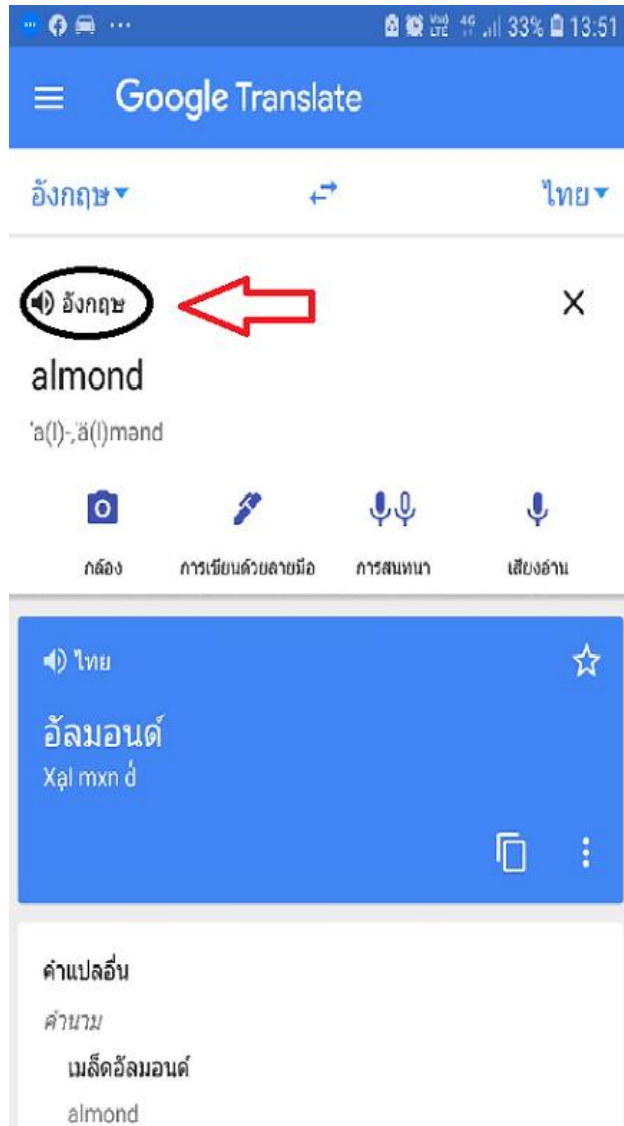
Figure 2. Google Translate application.
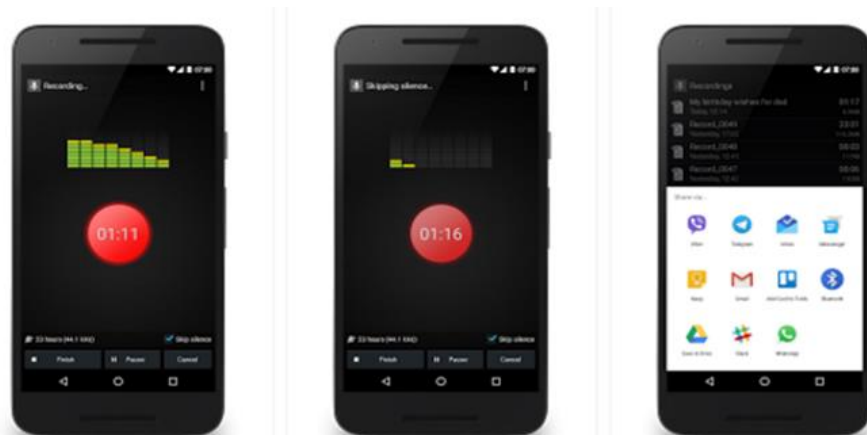
Figure 3. Audio record application.

Table 2. Rubric of pronunciation tests.

Category	Pronunciation
Very poor (1.00-1.50)	Students cannot pronounce, unable to understand.
Poor (1.51-2.50)	Pronunciation was difficult to understand, unclear pronunciation.
Medium(2.51-3.50)	Students rarely pronounced some characters, but generally it is fair.
Good (3.51-4.50)	Pronunciation was good and Pronunciation was clear
Excellent (4.51-5.00)	The pronunciation was very clear and accurate, easy to understand

Table 3. The pre and post vocabulary pronunciation tests.

Vocabulary		X̄	S.D.	Level	ID
	Maximum	57.40	0.06	Medium	S13
Pre-Test	Minimum	21.40	0.08	Poor	S21
	Average (All participants)	33.01	0.40	Poor	
Vocabulary		**X̄ (100%)**	**S.D.**	**Level**	**ID**
	Maximum	91.40	0.19	Excellent	S13
Post-Test	Minimum	34.40	0.52	Poor	S3
	Average (All participants)	59.75	0.63	Medium	

participants' audio record before-after use the mobile application and the students' pronunciations were analyzed to improve their pronunciation.

Data analysis

The data obtained from different instruments were analyzed and interpreted qualitatively and quantitatively. T-Test was employed to analyze that data.

RESULTS

Table 3 shows that the mean (X̄) score of the participants on pre- vocabulary pronunciation tests was 33.01. (S.D.0.40), which was at the poor level. The maximum score was 57.40 (S.D.0.06) which was number S13 at medium level. On the other hand, the lowest score was at 21.40, which was S21 at a poor level. The mean (X̄) score of the participants on post- vocabulary pronunciation tests was 59.75 (S.D.0.63). There was only one who can get an excellent level with score 91.40 at an excellent level was S13. Contrarily, there were two students who got a poor level, which was number S3 and S21.

Figure 4 presented the result of the pre-test score rated by 3 rates. The maximum score was at 2.87: rater1 was 2.80, rater2 was 2.88, and rater3 was 2.92 which was at a medium level. The second high score was S12 at 2.03:rater1 was 2.80, rater2 was 2.88, and rater3 was 2.92 at a medium level. The third high score in the pre-

test was S19. His score was at 1.99 which was rated rater1 was 1.80, rater2 was 2.36, and rater3 was 1.80 at the poor level.

Contrarily, the minimum score was S21 who was at a poor score at 1.07. The raters evaluated his score as follows; rater1 was 1.04, rater2 was 1.16, and rater3 was 1.00. The second minimum score was S 10 with a score of 1.12 at a poor level. The raters evaluate his score as follow rater1 was 1.44, rater2 was 1.16, and rater3 was 0.92.

Figure 5 illustrated the result of the post-test rated by 3 raters. In this session, all students seem to have improved their ability in pronunciation. The maximum score was S13 at 4.57. He was at an excellent level. The raters scored him as followed: rater1 was 4.48, rater2 was 4.44, and rater3 was 4.80. The second high score was S19 at 3.71 at a good level. The scores given by three raters were: rater1 was 3.68, rater2 was 3.40, and rater3 was 4.04. The third high score was S7 at 3.68. He was classified as a good level of improvement. The score rated by raters were rater1 was 3.04, rater2 was 3.64, and rater3 was 4.36.

On the other hand, Figure 5 showed that the minimum score of the post-test was S3 at 1.72 at a poor level. His score was evaluated by 3 raters as follows: rater1 was 1.24, rater2 was 1.64, and rater3 was 2.28. The second minimum score was S21. His ability in post-test pronunciation was at 1.91 which was at a poor level. The 3 raters scored him as follows: rater1 was 1.52, rater2 was 2.12, and rater3 was 2.08. The third minimum score
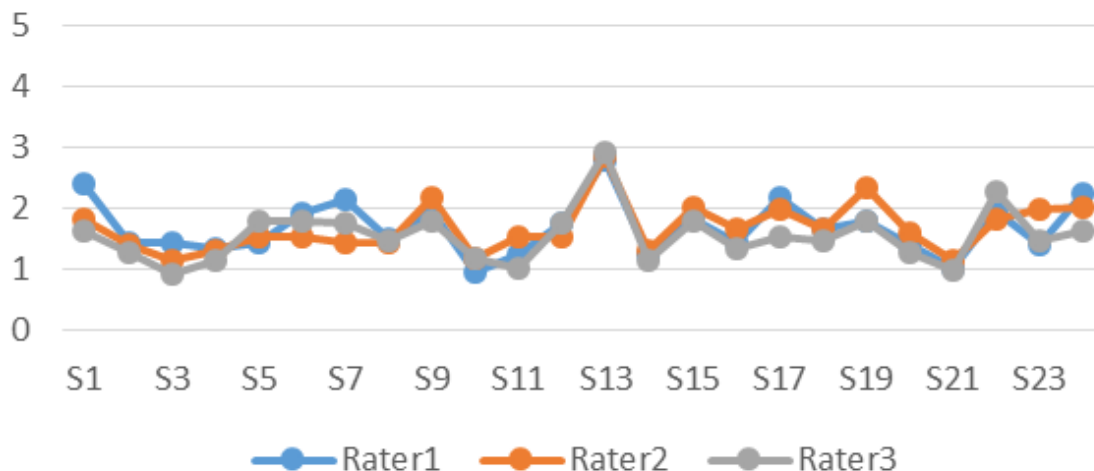
Figure 4. Pre-vocabulary test by three raters.
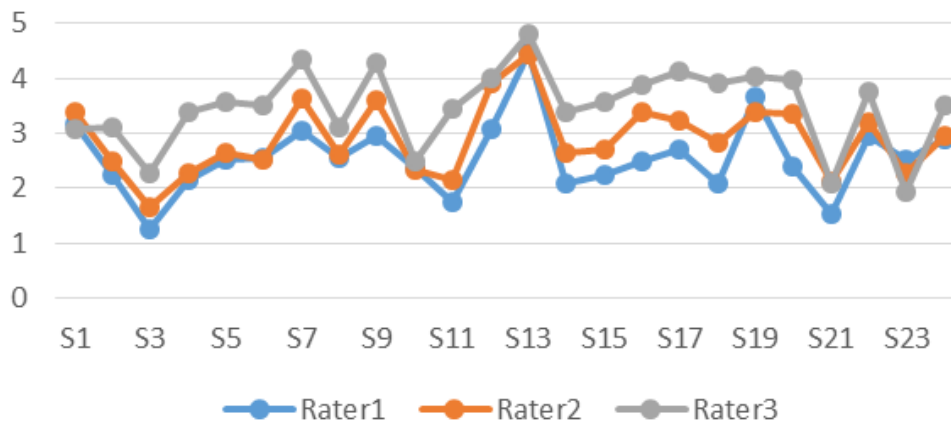
Figure 5. Post vocabulary test by three raters.

Table 4. T-Test of the pronunciation tests.

Vocabulary	X̄	S.D.	df	t	Sig.
Pre-test	33.01	8.01			
Post-test	59.75	12.67	23	17.52	0.000**
Paired sample	26.74	7.48			

**Significant at p<0.01.

was S23 at 2.24. He was classified as a good level of improvement. The scores from 3 raters were as follows: ater1 was 2.52, rater2 was 2.28, and rater3 was 1.92.

Table 4 present the consequence of the experiment conducted to find out the effect of using the Google Translate application for students with on improving their pronunciation of difficult words at the vocabulary test. The scores of the pre and post pronunciation tests were compared. The t-test was used to measure the significant difference. The result revealed that the students had improved their ability in pronunciation of difficult words significantly vocabulary. The results of students pronunciation abilities of their pre and post pronunciation tests were 33.01<59.75 (S.D. = 08.91)

Figure 6 shows that the t-test analysis of the differences between means yielded at 22.11. That was significant at the p<0.01 level. This suggested that the student's pronunciation significantly improved their
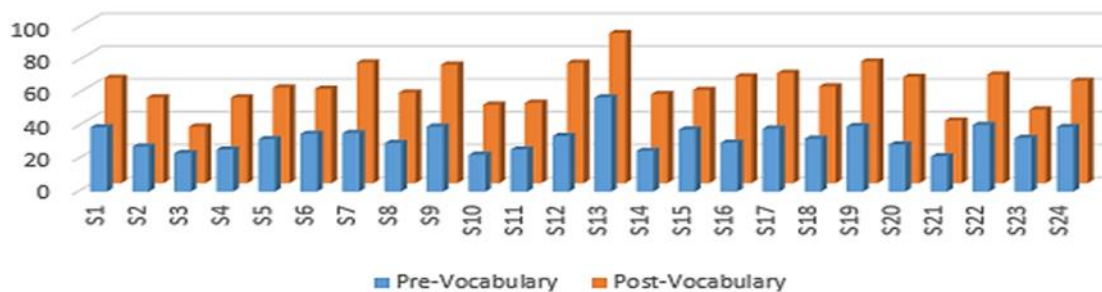
Figure 6. T-test of the vocabulary pronunciation tests.

pronunciation of difficult words significantly at the vocabulary level after using the Google Translate application. In other words, the Google Translate application can help students improve pronunciation ability.

Transcript of pre and post pronunciations

Transcripts of pre and post vocabulary pronunciation tests

This section displayed the transcript of vocabulary pronunciation before and after using Mobile applications rated by three raters.

The most unclear and mispronunciation vocabulary in the pre-test, three vocabularies were "Psycho", "Isle", and "Schedule" respectively were as follows:

1) "Psycho" was usually pronounced as /ˈpaɪ.sɪ.koʊ/ instead of /ˈsaɪ.koʊ/ and the total score in pre-test was 25.00, 2) "Isle" was usually pronounced as /ˈaɪ.səl/ instead of /aɪl/ and the total score in pre-test was 27.00, and 3) "Schedule" was usually pronounced as /ˈsked.du.əl/ instead of /ˈskedʒ.uːl/ and the total score in post-test was 27.33.

The most unclear and mispronunciation vocabulary in the post-test, three vocabularies were "Temperature", "Schedule", and "Error" respectively were as follows: 1) "Temperature" was usually pronounced as /ˈtem.pər.rə.tər/ instead of /ˈtem.prə.CHər/ and the total score in post-test was 51.67, 2) "Schedule" was usually pronounced as /ˈsked.du.əl/ instead of /ˈskedʒ.uːl/ and the total score in post-test was 59.67, and 3) "Error" was usually pronounced as /ˈər.rər/ instead of /ˈerər/ and the total score in post-test was 61.00.

The most accurate pronunciation vocabulary in the pre-test, three vocabularies were "Problem", "Juice", and "History" respectively were as follows: 1) "Problem", they were able to pronounce it correctly with the score was 61.00, 2) "Juice", they were able to pronounce it correctly with the score was 54.67, and 3) "History", they were able

to pronounce it correctly with the score was 54.00. The most accurate pronunciation vocabulary in the post-test were as follows; "Busy", "Chocolate", and "Effect" respectively were as follows: (1) "Busy", they were able to pronounce it correctly with the score was 100.33, (2) "Chocolate", they were able to pronounce it correctly with the score was 87.67, and (3) "Effect", they were able to pronounce it correctly with the score was 85.00.

Semi-structured interview

Question 2: What are the students' attitudes towards using Google Translate for enhancing their pronunciation of difficult words problem?
24 participants were participated in a semi-structured interview. 3 students were excellent in pronunciation of difficult words and 3 students were poor pronunciation. Each student was interviewed for about 5-10 min. Tape recording and note–taking were used while interviewing. The interview questions and report the time duration and the frequency of using mobile applications aimed at finding the students' reactions to the use of Google Translate application to improve their pronunciation problem. The findings from the semi-structured interview were presented as follows:
The students with good pronunciation were asked how they felt about the Google Translate application, and if they enjoyed using the program to improve their pronunciation of difficult words problem. For examples:

"…I feel like this app because there are ways to use the convenient, easy-to-use. It can help us to practice pronunciation, accent and can mimic the sound of a native English speaker." (S7)
"…This application not only English, there are many languages that make us learn more. Also, improve the listener to accent tongues, and know the meaning of the words too." (S12)
"…I like it because it is easy to use and carry convenient, anytime, anywhere, we can search any vocabulary all the time. It allows us to develop very well." (S16)

However, the students with poor pronunciation ability were asked whether they feel their pronunciation had been improved and how Google Translate application help them improve their pronunciation.

DISCUSSION

Overall, the findings participants who complete the testing indicated that Google Translate application improve their pronunciation. The discussion began with the improvement of difficult words pronunciation of the participants after using the application and comparison of the improvement of participants' pronunciation between pre- and post-tests.

The improvement of difficult words pronunciation of the participants after using google translate application

According to the results of the study, it can be seen that the participants' pronunciation has significantly improved their pronunciation after they used the Google Translate application. This result confirmed the hypothesis that the Google Translate can help students improve their pronunciation of difficult words. In addition, this result seems to correspond with other studies about the effects of Google Translate application in language classroom which was found that Google Translate application brought positive effects to language improving.

Nevertheless, there were some vocabulary students still incorrectly pronounced after using Google Translate application. There was, for example, "Genuine", "Chaos", "Isle", "Psycho", "Temperature", "schedule", and "Error". From linguistic points of view, the results of pronunciation tests and the students' score showed that most of the participant's pronunciation was incorrect. a) The pronunciation sticks with dual vowel pronunciation, as the same words e.g. "Genuine" /ˈjen.yuː.in/ as /ˈje.yuːn / and "Chaos" /ˈkeɪ.ɑːs/ as /ʃaʊs/, b) the pronunciation was incorrect because of these vocabularies No vote, some consonant (silent sound) e.g. "Isle" /ˈaɪl/ as /ˈaɪ.səl/ and "Psycho" /ˈsaɪ.koʊ/ as /ˈpaɪ.sɪ.koʊ/, and c) the pronunciation was incorrect that pronounced exactly the consonants and vowels, which were influenced of the mother tongue e.g. "Temperature" /ˈtem.prə.ʃər/ as /ˈtem.pər.rə.tər/, "schedule" /ˈskedʒ.uːl/ as /ˈsked.du.əl/, and "Error" /ˈerər/ as /ˈər.rər/ were also pronounced incorrectly but were accepted in Thai daily communication. Therefore, this result leads to a conclusion that the pronunciation of difficult words the students commonly used in daily life was more difficult to change. In other words, their habit of pronunciation was formed and influenced of the mother tongue.

Based on the results of this study, there were 3 possible barriers of students' difficult pronunciation as follows; (1) the pronunciation sticks with dual vowel pronunciation, as the same words, (2) vocabulary No vote, some consonant (silent sound), and (3) pronounced exactly the consonants and vowels, which were influenced of the mother tongue. Therefore, the students could improve their pronunciation abilities, if they have more time to practice, and their awareness in the fore mentioned three aspects is properly raised.

Conclusion

The Google Translate application was employed for enhancing the pronunciation of difficult words. The pronunciation tests were tried out and checked by three experts. The correctness of English pronunciation tests was checked by two native speakers and 1 Thai teacher from Rajamangala University of Technology Isan. The pronunciation tests were finally revised according to comments made by all concerned parties.

After being rectified, the pronunciation tests were used to examine the participants' pronunciation. Before starting the experimental research, each participant must practice using Google Translate application and ask questions how to use the application. Then, each participant had to take pre-pronunciation tests. And then, they had to practice to pronounce vocabulary and sentences of difficult words correctly by using Google Translate application. The duration of using Google Translate application was 4 weeks excluding pre and post-session: practice 3-4 times a week. After using the Google Translate application, the participant's pronunciations were recorded in pre and post session. Three experts scored their pronunciations. Finally, the scores of their pre-test were compared with those of post-tests after using the Google Translate application.

The use of their mobile applications devices capabilities can help language learners have more learning experiences, situating learning without their cultural and mother tongue. Hence, the correct pronunciation and perception are essential for developing successful oral/aural language proficiency. While this does not require explicit use of the mobile context, the convenient micro-learning opportunities provided by the mobile platform are a considerable advantage (Joseph, 2009).

In relation to their attitudes towards the use of Google Translate application for enhancing their pronunciation, almost all of the students had positive reactions. The participants stated that they were motivated to practice pronouncing vocabularies and sentences with difficult words and more confident after using the application.

Moreover, it was more convenient to study with the Google Translate application. However, some suggestions were provided for improvement.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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How do games affect the writing skills of young EFL learners?

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English and Turkish languages have different orthographies. The orthography of English is considered relatively deep since many English letters can correspond to more than one sound; many sounds can be represented by more than one letter and English has a number of consonant digraphs/clusters such as th, sh, ch, and ck to represent a single sound. Whereas, the Turkish orthography presents a good example of the total shallow orthography as each letter represents only one phoneme and each phoneme is represented by only one letter. This difference can be problematic for Turkish EFL learners during the writing activity. Therefore, the primary aim of this experimental study was to explore the effects of games on the development of the writing skills of primary school EFL learners. 42 primary school EFL students voluntarily participated in the study and they were grouped as control and experimental. The experimentation took 9 weeks and in the last week of the study both groups were given a dictation exercise to find out if any differences existed. The results demonstrated that games positively affect primary school EFL learners' writing skills and therefore it was recommended that games should be used during the teaching of writing skills in primary school EFL contexts.

Key words: EFL, primary school, writing skills, games.

INTRODUCTION

The most recent amendment that has been put into effect about the teaching of English as a compulsory primary school subject in Turkish state primary schools (MoNE, 2018) requires that listening and speaking are prioritized as language skills while reading and writing skills are offered with limited application. However, since knowing a language is a complex and four-language-skills-integrated process, no matter how much the students are successful in listening and speaking tasks, without appropriate reading and writing, a language cannot be fully comprehended (Wright, 2010). As one result of this prioritization, primary school EFL learners are experiencing difficulties during writing tasks. One of the main reasons for this situation can be the English orthography (Hannell, 2008) alongside with L1 influence. One may think that it is as unimportant to write at the isolated-word-level; however, as they are young learners, this problem may lead to bigger issues in their future second language learning experiences. The students with poor spelling abilities may "hold back from seeking or accepting roles that are likely to expose poor spelling; avoid further education, training or promotion if they fear that their spelling skills will let them down; and feel inadequate in comparison to others who can spell well" (Hannell, 2008: 2).

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Let us now briefly look into the main differences between the English and Turkish orthographies. There are 26 letters in the English Alphabet: 5 vowels (a,e,i,o,u) and 21 consonants (b,c,d,f,g,h,j,k,l,m,n,p,*q*,r,s,t,v,*w,x,*y,z) (Roach, 2009). Although both languages use a very similar alphabet, English phonology, based on the vowel system that includes short-long vowels, diphthongs, trip thongs and consonants that are categorized according to the place of articulation and manner of articulation (Roach, 2009) is highly affecting the orthography. "The letters do not stand for segments that are acoustically isolable in the speech signal"; thus, consonants and vowels are not "neatly segmented in correspondence with the way they are represented in print" (Shankweiler and Lundquist, 1992: 180). Therefore, the orthography of English is considered relatively *deep* since many English letters can correspond to more than one sound (e.g. *c* for /k/ in *cat* and /s/ in *cinema*), many sounds can be represented by more than one letter (e.g. *c,k,* or *q* for /k/), and English has a number of consonant digraphs/clusters such as *th-, sh-, ch-,* and *ck-* to represent a single sound (Miller, 2019: 3). Likewise, Yule (2014) defines the English writing system as being alphabetic in a very loose sense in that there are irregular correspondences between sounds and their symbolic representations.

On the other hand, there are 29 letters: 8 vowels (a,e,*ı*,i,o,*ö,*u,*ü*), 20 consonants (b,c,*ç,*d,f,g,h,j,k,l,m,n,p, r,s,*ş,*t,v,y,z) and the "silent g" written as "*ğ*" lengthens the preceding vowel, but it is not a phoneme by itself (Durgunoğlu, 2006). Turkish presents a good example of the total shallow orthography as each letter represents only one phoneme and each phoneme is represented by only one letter. Durgunoğlu (2006) adds that there is no phoneme in the spoken word excluded in spelling except the written form of the borrowed words from other languages (e.g.*tren*[train], pronounced as /tiren/). The relation between letters and phonemes is isomorphic and exhaustive (Katz and Frost, 1992). Since Turkish is an agglutinative language,vowel harmony, in which all-possible combinations of the distinctive features (front-back, high-low, and rounded-unrounded) are observed, is one of the important characteristics in Turkish phonology as it decides the phonemes in the word-formation process which follows a predictable pattern (Kornfilt, 1990 as cited in Durgunoğlu, 2006). Consonant clusters are not allowed in the beginning of Turkish words but in the ends of the syllables such as *çift-lik* [farm] and *kent* [city]. Therefore, Turkish syllables are in four simple syllables types: V, VC, CV and CVC, and the most frequent form is CV (Durgunoğlu, 2006). When compared to English, Turkish has fewer monosyllabic words which are phonologically consistent with the rules of the language (Durgunoğlu, 2006); most Turkish words are polysyllabic. In Turkish, as the spelling-sound correspondence is direct, once given the rules, anyone can immediately read or write the words correctly (Besner and Smith, 1992).

As a result, Turkish primary school EFL learners have hesitations and make mistakes during the writing process, mainly due to the orthographic differences of the English and the Turkish languages. On this matter, Miller (2019) argues that the orthography of English makes spelling words especially difficult for learners whose first language has a shallower orthography. Miller affirms that learning a new orthography is learning a new way of understanding visual information and how it corresponds to phonological information. Therefore, readers/writers must pay attention to the arbitrary or unusual pronunciations and spellings of irregular words in English (Besner and Smith, 1992). Thus, the development of L2 spelling skills is not an easy process but it is only possible with appropriate practice.

According to Mattingly (1992), without a spelling system, orthography is not productive: the invention of the one requires the invention of the other. Today, it has become necessary for all members of a modern society to become able to communicate in writing by committing "spelling patterns" on paper or on screen (Montgomery, 2007).As an important sub-skill of writing, spelling helps writers for accurate communication and correct spelling helps learners with writing fluency, good expression and confidence (Hannell, 2008). The spelling skill is mostly linked to the reading skill as both reading and writing depend upon the alphabetic principle and they are completing each other and use similar or common knowledge to be achieved (Shankweiler and Lundquist, 1992). "When learning to read in English, a learner must view printed letters (graphemes), decode their sounds, and combine those sounds together to form words" (Miller, 2019: 1). However, English language readers "have probably had the experience of being unsure how to spell some words" (Shankweiler and Lundquist, 1992: 183), because, compared to reading, spelling requires additional knowledge and finer-grained, more explicit vocabulary knowledge at both the spoken and written levels.

According to Montgomery (2007), in a method called "emergent writing" (developmental writing or creative spelling), teachers encourage their students to practice more spelling until they achieve the standard orthography. When encouraged to invent spellings for words, young children invent a system that is more compatible with their linguistic intuitions than the standard system and develop themselves through time (Shankweiler and Lundquist, 1992: 183). To be a successful speller, one should have the cognitive components of the spelling skill and improve him/herself by time. During the experimentation of the present study games were used as a means of possible treatment to overcome spelling problems. Therefore, we should now turn our attention to games in EFL contexts. Ersöz (2007: 7) states that "games are highly motivating because they are amusing and interesting". Similarly, according to Yolageldili and Arikan (2011), games are fun and enjoyable activities,

which lead cooperation and social interaction. Children naturally play games in their lives (Ersöz, 2007) and playing a game is motivating for them, because it is a challenge, and they want to win (Rumley, 1999). Students become excited while playing, because the winner is not obvious till the end of the game which can be concluded as games "help and encourage many learners to sustain their interest and work". In addition, during playing games, learners are required to work with others to be successful and most of them enjoy cooperation and social interaction and thus "when cooperation and interaction are combined with fun, successful learning becomes more possible" (Yolageldili and Arikan, 2011: 220). Another aspect of games is that they help to sustain quite long exchanges in L2 and as the language used for young learners is limited, this is vital for them (Rumley, 1999).

When we investigate the literature about spelling and games, we come to understand that almost all of the previous studies focused on the description and categorization of spelling mistakes. One such example was carried out by Kırkgöz (2010) who analyzed the 400 individual written errors in the essays of 72 adult Turkish EFL learners. She collected the data in three steps: the collection of sample errors, identification of errors and description of errors. Kırkgöz categorized errors as interlingual (subtitled as grammatical interference, prepositional interference, verb tense, and lexical interference) and intralingual (subtitled as over-generalization, use of articles, and redundancy). According to results, interlingual errors were higher in number, which revealed that the learners tended to transfer from their L1 (Turkish) in the L2 writing processes. Thus, the present study is unique for Turkish young learner EFL contexts in that it seeks for ways of solving the spelling problem faced by Turkish young EFL learners. The present experimental study is therefore of significant importance in that it seeks to address the following main question:

How do games affect the writing skills of primary school 3rd grade EFL learners?

With this main purpose in hand, the research will also focus on the following sub-questions:

(1) What are the differences regarding the participants' success rates in the dictation exercise?
(2) What are the differences regarding he participants' target vocabulary correctness rates in the dictation exercise?

METHODOLOGY

Participants

A total of 42, 3rd grade students studying in a Turkish state primary school in the city of Burdur voluntarily participated in the current study in the second term of the 2018-2019 academic year. The students were all literate in Turkish and all were monolingual. They were all A1 level English learners and therefore considered as identical. They were divided into two classes as 3C and 3D, 21 students in each class. There were 11 males and 10 female students in 3C and 10 males and 11 female students in 3D. They were aged between 8.5 - 9.5 and all attended a two-hour (40 min each) compulsory English course per week. The classes were selected randomly as experimental and control.

Data collection instruments

Two spelling games were chosen and applied to the experimental group during the study at the end of every two-hour English lesson and data were collected by means of a Dictation Exercise applied to both groups at the end of the study. The games were: "*Match the word to the image*" and "*Join up the words*", adopted from Cave (2006). It would be worthwhile, at this point, to briefly explain the games and the Dictation Exercise used in this study.

Match the word to the image: Picture flashcards and their accompanying written word-cards were created about the target vocabulary (Table 1). These were handed out to the students sitting in groups of four and they were asked to match the words and the flashcards. The first group to complete the correct matching was given a point.
Join up the words: The target vocabulary was written on word-cards and each word-card was cut in half. These were handed out to the students sitting in groups of four and they were asked to reconstruct the words by putting together the two halves correctly. The first group to reconstruct the correct word was given a point.
Dictation Exercise: The dictation exercise was applied to both groups in week 9, the final week of the study. Out of the 56 target vocabulary 30 were chosen randomly (Table 2). Each word in Table 2 was pronounced twice by the teacher and the students were asked to write the words on a blank paper that was pre-given by the teacher.

Procedure

The implementation process took 9 weeks in total and four units (6, 7, 8 and 9) from the 3rd grade 2nd term were covered during the first 8 weeks of the study. During this first 8 weeks, the experimental group played the two games at the end of every two-hour English lessons, but the control group did not. The English lessons of the two groups were on the same day. In week 9, both groups took the Dictation Exercise on the same day. The target vocabulary was chosen from the English program (MoNE, 2018) and from the book titled "İngilizce 3" provided by MoNE (Dağlıoğlu, 2015).

To maintain a clear understanding of the implementation process in this study, the first 2 weeks (Unit 6) and the last week (Week 9) will be explained in detail, as in weeks 3-8 the implementation was the same as in the first 2 weeks but with units 7, 8 and 9.

The topic for the first two weeks was "Unit 6, My House". The target vocabulary was; *bathroom, bed, bedroom, chair, cup, garage, kettle, kitchen, living room, playroom, shampoo, soap, sofa, table,* and *television.* During the first hours (40 min) in the first two weeks, the students practiced the vocabulary by the help of flashcards and the pronunciations of the words were practiced as a whole-class. Then the teacher guided the students to do the related activities (e.g. repeating what they hear, matching by listening, reading and writing at word-level, and etc.) from the course book (Dağlıoğlu, 2015). During the second hours (40 min) in the first two weeks, the teacher continued with the activities and some practices were done using similar activities suggested in the book. Then, the

Table 1. Target vocabulary.

Unit 6-My house	Unit 7-In My city	Unit 8-transportation	Unit 9-weather
Bathroom	Bank	Balloon	Cloudy
Bed	Cafe	Bike	Cold
Bedroom	Campus	Boat	Cool
Chair	Carnival	Bus	Foggy
Cup	Classroom	Car	Hot
Garage	Home	Helicopter	Nice
Kettle	Hospital	Motorcycle	Rainy
Kitchen	Museum	Plane	Snowman
Living room	Park	River	Snowy
Playroom	Restaurant	Road	Sunny
Shampoo	School	Sea	Warm
Soap	Shopping center	Ship	Weather
Sofa	Zoo	Sky	Windy
Table		Train	
Television		Truck	

Table 2. Dictation exercise.

Target vocabulary		Unit	Target vocabulary		Unit
1.	bedroom	6	2.	balloon	8
3.	restaurant	7	4.	windy	9
5.	living room	6	6.	motorcycle	8
7.	carnival	7	8.	hot	9
9.	soap	6	10.	road	8
11.	school	7	12.	cool	9
13.	kettle	6	14.	helicopter	8
15.	home	7	16.	foggy	9
17.	sofa	6	18.	car	8
19.	hospital	7	20.	sunny	9
21.	shampoo	6	22.	boat	8
23.	zoo	7	24.	rainy	9
25.	kitchen	6	26.	truck	8
27.	park	7	28.	snowy	9
29.	television	6	30.	plane	8

experimental group played the "Match the word to the image" and the "Join up the words" games for 10-15 min. The control group did not play any games but continued with their routine activities. The same implementation was carried out during the remaining six weeks. In the final week of the study (week 9), the Dictation Exercise was administrated to both groups during class hours and the answer sheets were collected for further analysis.

Data analysis

Having finished the study, data were entered into the Microsoft Excel 2016 program, categorized and quantitatively analyzed by using IBM SPSS Statistics 25 packet program according to the Dictation Exercise results. The participants' success rates and the participants' target vocabulary correctness rates in the Dictation Exercise were categorized and analyzed according to group statistics and percentages.

RESULTS AND DISCUSSION

Quantitative data gathered from the experimental and control group in the Dictation Exercise will be presented in tables. This will be done in two stages; first, analysis of the Dictation Exercise on the grounds of participants' overall success rates; and, second, comparisons between groups according to participants' individual target vocabulary correct spelling rates.

Table 3. Participants' overall success rates: Percentages.

Units	Week	Groups	N	Correct spelling percentage (%)	Percentages' difference (%)
All	9	Control	21	44.13	19.36
		Experimental	21	63.49	

Table 4. Participants' overall success rates: Percentages on a-units-basis.

Units		Unit 6	Unit 7	Unit 8	Unit 9
Topics		My House	In My City	Transportation	Weather
Correct spelling percentage (%)	Control group	46.42	44.89	39.88	45.57
	Experimental group	61.84	57.82	66.07	68.02
Percentages' difference between groups (%)		15.42	12.93	26.19	22.45

Participants' overall success rates

Analysis of the dictation activity: Participants' overall success rates

The dictation exercise was analyzed in two dimensions using Microsoft Excel 2016 and IBM SPSS Statistics 25 packet programs. The calculations were done by using the analysis of the participants' group statistics in terms of the mean, standard deviation, standard error mean and means' difference between groups.

First, the participants' correct spelling percentages were examined and Table 3 exhibits the participants' success rates in terms of correct spelling percentages and the percentage difference between groups. As we can clearly see in Table 3, the experimental group outperformed the control group on the grounds of correct spelling by 19.36%. The correct spelling percentage of the control group was 44.13, whereas the experimental group scored 63.49% in the Dictation Exercise. This finding demonstrates that games develop the writing skills of young EFL learners.

Second, the results of the Dictation Exercise were analyzed on a unit basis to find out in which units the participants performed better. Table 4 reveals the participants' correct spelling percentages according to units, based on the Dictation Exercise in terms of correct spelling percentage and percentage difference between groups. As Table 4 demonstrates, when we evaluate the participants' success rates on the grounds of a unit-based evaluation we shall come to see that the experimental group outperformed the control group in every unit. The experimental group was most successful in Unit 9 (with 68.02%) and least successful in Unit 7 (with a 57.82%). On the other hand, the control group was most successful in Unit 6 (with a 46.42%) and least successful in Unit 8 (with 39.88%). The highest difference between groups occurred in Unit 8 (26.19%)

and the lowest difference between groups occurred in Unit 7 (12.93%). Taken together, both groups best performance was in Unit 9 (113.59%), followed by Unit 6 (108.26%), Unit 8 (105.95%) and Unit 7 (102.71%).

Participant' individual target vocabulary correctness rates

In this section, the data obtained from the dictations were analyzed quantitatively based on the participants' correct spelling rates of the target vocabulary. The results will be presented according to units in tables; and this will be done by an analysis of the dictation exercise: target vocabulary correct spelling percentages.

Analysis of the dictation exercise: participants' individual target vocabulary correct spelling percentages

The 30 target vocabulary, out of 56, dictated in the Dictation Exercise were analyzed, the results were calculated and then turned into unit-based percentage averages. The tables were constructed according to the dictation exercise results in terms of correct spelling percentages and percentage difference between groups.

Table 5 demonstrates "Unit 6 - My House" dictated target vocabulary correct spelling percentages and percentage difference between groups. The target word "bedroom" was the most correctly spelled word by the experimental group (85.71%) followed by "sofa, living room, kitchen, kettle and television" and the words "shampoo and soap" were the least correctly spelled words (47.62%). The control group, on the other hand spelled the word "sofa" most correctly (66.67%) followed by "bedroom and living room, kettle and soap, kitchen, television" and "shampoo" was the least correctly spelled

Table 5. Individual correct spelling rates for unit 6 dictated target vocabulary.

Unit 6: My house dictated target vocabulary			Bedroom	Kettle	Kitchen	Living room	Shampoo	Soap	Sofa	Television
Overall dictation exercise results	Correct spelling percentages (%)	Cont.	57.14	52.38	38.10	57.14	19.05	52.38	66.67	28.57
		Ex.	85.71	57.14	61.90	66.67	47.62	47.62	71.43	57.14
	Percentages' difference between groups (%)		28.57	4.76	23.80	9.53	28.57	4.76	4.76	

Table 6. Individual correct spelling rates for Unit 7 dictated target vocabulary.

Unit 7: In my city dictated target vocabulary			Carnival	Home	Hospital	Park	Restaurant	School	Zoo
Overall dictation exercise results	Correct spelling percentages (%)	Cont.	28.57	57.14	33.33	66.67	19.05	33.33	76.19
		Ex.	57.14	57.14	52.38	90.48	33.33	19.05	95.24
	Percentages' difference between Groups (%)		28.57	0.00	19.05	23.81	14.28	14.28	19.05

Table 7. Individual correct spelling rates for Unit 8 dictated target vocabulary.

Unit 8: Transportation dictated target vocabulary			Balloon	Boat	Car	Helicopter	Motorcycle	Plane	Road	Truck
Overall dictation exercise results	Correct spelling percentages (%)	Cont.	28.57	47.62	76.19	42.86	19.05	33.33	23.81	47.62
		Ex.	71.43	85.71	80.95	80.95	47.62	52.38	38.10	71.43
	Percentages' difference between groups (%)		42.86	38.09	4.76	38.09	28.57	19.05	14.29	23.81

word (19.05%). The most correctly spelled word by both groups was "bedroom" with a total of 142.85% and the least correctly spelled word by both groups was "shampoo" with a total of 66.67%. The word "soap" was the only case where the control group outperformed the experimental group. The highest difference between the groups occurred in the spelling of the words "bedroom and shampoo" (28.57%) and the lowest difference between the groups occurred in the spelling of the words "kettle, soap and sofa" (4.76%).

Table 6 demonstrates "Unit 7 – In My City" dictated target vocabulary correct spelling percentages and percentage difference between groups. The target word "zoo" was the most correctly spelled word by the experimental group (95.24%) followed by "park, carnival and home, hospital, restaurant" and the word "school" was the least correctly spelled word (19.05%). The control group also spelled the word "zoo" most correctly (76.19%) followed by "park, home, hospital and school, and carnival" and "restaurant" was the least correctly spelled word (19.05%). The most correctly spelled word by both groups was "zoo" with a total of 171.43% and the least correctly spelled words by both groups were "school and restaurant" with a total of 52.38% each. The word

"school" was the only case where the control group outperformed the experimental group. The highest difference between the groups occurred in the spelling of the word "carnival" (28.57%) and the lowest difference between the groups occurred in the spelling of the word "home" when the scores were equal.

Table 7 demonstrates "Unit 8 – Transportation" dictated target vocabulary correct spelling percentages and percentage difference between groups. The target word "boat" was the most correctly spelled word by the experimental group (85.71%) followed by "car and helicopter, balloon and truck, plane, motorcycle" and the word "road" were the least correctly spelled words (38.10%). The control group, on the other hand spelled the word "car" most correctly (76.19%) followed by "boat and truck, helicopter, plane, balloon, and road" and "motorcycle" was the least correctly spelled word (19.05%). The most correctly spelled word by both groups was "car" with a total of 157.14% and the least correctly spelled word by both groups was "road" with a total of 61.91%. The experimental group outperformed the control group in all the words. The highest difference between the groups occurred in the spelling of the word "balloon" (42.86%) and the lowest difference between the

Table 8. Individual correct spelling rates for unit 9 dictated target vocabulary.

Unit 9: Weather dictated target vocabulary			Cool	Foggy	Hot	Rainy	Snowy	Sunny	Windy
Overall dictation exercise results	Correct spelling percentages (%)	Cont.	42.86	52.38	80.95	23.81	47.62	33.33	38.10
		Ex.	57.14	76.19	85.71	61.90	61.90	61.90	71.43
	Percentages' difference between groups (%)		14.28	23.81	4.76	38.09	14.28	28.57	33.33

Table 9. Best and Worst Spelled Vocabulary on a Unit-Basis.

	Experimental group	Control group
Unit 6	Best: "bedroom" 85.71% Worst: "shampoo" and "soap" 47.62%	Best: "sofa" 66.67% Worst: "shampoo" 19.05%
Unit 7	Best: "zoo" 95.24% Worst: "school" 19.05%	Best: "zoo" 76.19% Worst: "restaurant" 19.05%
Unit 8	Best: "boat" 85.71% Worst: "road" 38.10%	Best: "car" 76.19% Worst: "motorcycle" 19.05%
Unit 9	Best: "hot" 85.71% Worst: "cool" 57.14%	Best: "hot" 80.95% Worst: "rainy" 19.05%

groups occurred in the spelling of the word "car" (4.76%).

Table 8 demonstrates "Unit 9 - Weather" dictated target vocabulary correct spelling percentages and percentage difference between groups. The target word "hot" was the most correctly spelled word by the experimental group (85.71%) followed by "foggy, windy, rainy-snowy and sunny", the word "cool" was the least correctly spelled words (57.14%). The control group, also spelled the word "hot" most correctly (80.95%) followed by "foggy, snowy, cool, sunny, windy" and "rainy" was the least correctly spelled word (23.81%). The most correctly spelled word by both groups was "hot" with a total of 166.66% and the least correctly spelled word by both groups was "rainy" with a total of 85.71%. The experimental group outperformed the control group in all the words. The highest difference between the groups occurred in the spelling of the word "rainy" (38.09%) and the lowest difference between the groups occurred in the spelling of the word "hot" (4.76%).

Conclusion

The primary aim of this study was to find out whether games affected the writing skills of primary school 3rd grade EFL learners. With this main query in hand, this study sought to find out whether any differences would exist between the experimental and control group in regards to participants' success rates and the participants' target vocabulary correctness rates in the Dictation Exercise. The findings, as they were discussed

earlier, demonstrated that the experimental group outperformed the control group on the grounds of overall and total correct spelling by %19.36, thus we may argue that games help to the development of the writing skills of young EFL learners. Success rates on the grounds of a unit-based evaluation also demonstrated that the experimental group outperformed the control group in every unit. Taken together, both groups best performance was in Unit 9 (113.59%), followed by Unit 6 (108.26%), Unit 8 (105.95%) and Unit 7 (102.71%).

Therefore, it is recommended that Turkish primary school English language teachers use games in the development of their students' writing skills. Furthermore, the findings of this research also revealed that the participants in this study were better in correctly writing some of the target vocabulary, that was the focus of this study, than others. To this end, Table 9 reveals the best and worst spelled vocabulary by the two groups in this study. Table 10, on the other hand, reveals the best and worst spelled vocabulary in this study, regardless of the groups. Thus, it is believed by the author that it is a more inclusive and general finding.

As a final word, the findings of this study and the findings revealed in Tables 9 and 10 may serve as a reference and may be of help to Turkish primary school English language teachers during their teaching, practice and planning of any spelling activities. They may, for example, want to do more practice on the worst spelled vocabulary in each unit. A further phonological analysis of the best and worst spelled vocabulary should be the topic for further research.

Table 10. Best and worst spelled vocabulary, regardless of the groups.

Unit 6	Best: "bedroom" 142.85% Worst: "shampoo" 66.67%
Unit 7	Best: "zoo" 171.43% Worst: "school" and "restaurant" 52.38% each
Unit 8	Best: "car" 157.14% Worst: "road" 61.91%
Unit 9	Best: "hot" 166.66% Worst: "rainy" 58.71%

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Gender differences in achievement, interest and retention of students' exposed to fabrication and welding engineering craft practice through cognitive apprenticeship instructional technique in Nigeria

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The study was a pre-test, post-test, non-equivalent control group quasi-experiment, involving students in intact classes. Three research questions and three hypotheses guided the study. The population and sample for the study consisted of all 64 National Technical Certificate (NTC) II students of fabrication and welding engineering craft practice in Ekiti State. These comprise 53 males and 11 females. The instruments used for data collection were the fabrication and welding achievement test and fabrication and welding interest inventory. The instruments were subjected to face and content validation by three experts. The reliability coefficients of the instruments are 0.79, 0.75 and 0.82 respectively. Mean was used to answer research questions, while ANCOVA was used to test the hypotheses. The mean score of girls was not significantly different from those of boys in the achievement test. There was a significant difference in the mean interest and retention scores of students based on gender.

Key words: Cognitive apprenticeship, gender, cognitive achievement, interest, retention, fabrication and welding.

INTRODUCTION

Providing quality education leads not only to improved enrolment but also ensures that boys and girls are fully able to realise the benefit of education. Adopting an approach that takes into account the relationship and interaction between males and females according to the United States Agency for International Development (USAID), (2008) will address four dimensions: equality of access; equality in the learning process; equality of educational outcomes and equality of external results.

Gender refers to a psychological term, which describes behaviours and attributes expected of individual on the basis of being a male or a female (Uwameiye and Osunde, 2005). In most societies, gender role has relegated females to the side-lines, preventing them from participating in and benefiting from educational and development efforts (Ogbuanya and Owodunni, 2015).

In recent times, the gender factor has assumed prominence in science vocational and technical education

discourse. It has been documented that disparity exists between male and female students' performance. Several studies such as Zaharim et al. (2013), Akpotohwo and Ehimen (2014) and Okwelle et al. (2018) have shown differential performance in activities as a result of gender in favour of boys. According to UNESCO (2012), the noticed disparity in achievement between genders may be as a result of conformity with certain traditions in some countries which regard technical and vocational education as predominantly for boys only. Other research findings have attributed the reasons for the disparity in students' performance based on gender to include that male and female genders are different in several respects such as the rate of brain development (Jiang et al., 2019), brain lateralization (Marco et al., 2019), brain tasks execution strategies (Gomez et al., 2011), seeing and hearing endowed capabilities (Naomi, 2018), classroom learning climatic conditions (Hodgins, 2008) and learning strategies or styles (Mahmud and Nur, 2018).

Opare (2011) also noted the effects of stereotyped belief notion that science and technology subjects are unfeminine and that women who study those courses are unattractive; the apparent perception of "low factor of safety" in some courses as well as "strength requirement" are some of the major factors that undermine the level of attendance and performance of female students in vocational education related trades, inclusive of fabrication and welding engineering craft practice. Each or all of these factors poses constraint to academic performance of students based on gender if left unchecked.

One probable cause of this disparity may also not be unconnected to teaching methods employed by instructors to teach the students which were described by the National Business and Technical Examination Board (NABTEB) chief examiners report (2017) as obsolete in most technical colleges. Sharma and Kumar (2018) opined that the continued use of the chalk-and-talk traditional teaching methods to teach in our schools may not provide students with valuable skills and may also lead to students not retaining knowledge. The methods are based on the learning theory of behaviorism. They thus encourage students to be passive, direction followers and product-oriented. Fabrication and Welding Engineering craft practice is one of the mechanical related trades offered in technical colleges in Nigeria. The goal of Fabrication and Welding Engineering craft practice according to the National Board for Technical Education NBTE (2001) is to give training and impart the necessary skills leading to the production of craftsmen, technicians and other skilled personnel who will be enterprising and self-reliant. This goal can, however, be achieved only when vital components of the trade such as structural steelwork, sheet metal work and importantly, welding work are appropriately and effectively taught to learners in other to fit into the 21st-century workplace,

high proficiency is required of the trainee in carrying out the processes of metal arc welding in a well-structured teaching/learning processes and environment. This is as against the traditional apprenticeship system of imparting knowledge which has existed from ancient times till now.

In modern times, apprenticeship has largely been replaced by an alternative model of instruction that is accessible within the framework of formal schooling. It is a model of instruction that goes back to apprenticeship but incorporates elements of schooling. This model is referred to as "cognitive apprenticeship" propounded by Collins et al. (1989). A cognitive apprenticeship employs a constructive learning theory. It is much like a trade apprenticeship, with learning that occurs as experts and novices interact socially while focused on completing a task; the focus, as implied in the name, is on developing cognitive skills through participating in authentic learning experiences. Francesca (2015) succinctly described it as "learning-through-guided-experience on cognitive and metacognitive, rather than physical, psychomotor skills and processes in traditional apprenticeship. Cognitive Apprenticeship Instructional Method (CAIM) is a framework outlining the methodology for teaching complex cognitive tasks through guided learning (Collins et al., 2004).

In CAIM, the teacher, expert or more knowledgeable peer need to deliberately bring his/her thinking to the surface to make it visible. The teachers' thinking must be made visible to the students and students' thinking must be made visible to the teacher. The aim is to get the thinking process out into the space between teachers (experts) and students (novice) where they can both literarily see it. Ertmer and Newby (2005) explained that applying apprenticeship techniques to largely cognitive skill requires the externalization of processes that are usually carried out internally. By bringing this tacit process into the open, students can observe, enact, and practice them with help from the teacher and from other students. The challenge in CAIM is to present a range of tasks varying from specific to diverse and to encourage students to reflect and articulate the elements that are common across tasks (Collins et al., 1991). As teachers present the targeted skill to students, they can increasingly vary the context in which those skills are used. The goal, according to Collins et al, is to help students generalize the skill or knowledge so that it could be transferred and applied independently to different settings. Collins et al. (1989) developed six teaching methods necessary in a CAIM class. These include modeling, coaching, scaffolding, articulation, reflection and exploration.

One important role of the teacher is to order and structure the learning environment and use of motivational techniques to secure and sustain the attention and interest of learners Accordingly, Judith et al. (2016) see interest as a powerful motivational process that energizes learning, guides academics and career

trajectories and essential to academic success. Interest does not come as a result of force; it is as a result of an individual`s eagerness to learn. Therefore, interest as an affective behaviour can be aroused and sustained in teaching and learning through appropriate teaching strategy. Ogwo and Oranu (2006) and Ngwoke (2004) emphasized that unless the teacher stimulates students' interest in learning, students' achievement will be minimal. Fabrication and welding engineering craft practice is an integral part of vocational and technical education. In order to facilitate teaching and learning, and also increase both male and female interest in the trade, retention of learnt knowledge by students is a relevant factor.

Retention has to do with the ability to remember and apply previously learnt behaviour. Accordingly, Andriotis (2017) maintained that retention of learning is the process by which new information is transferred from one short term to long term memory. It is a learning that lasts beyond the initial unit or lesson and it is assessed with a test administered in two or more weeks after the information has been taught and tested.

This implies that a learner who repeats an acquired piece of knowledge with less error is said to have retained the material taught. Martin et al. (1991) discovered that for long time retention of knowledge to be achieved, motivation and interest of the learners must be sustained through the usage of appropriate teaching method. Such method should be capable of equipping the students with critical thinking skills. Thus, the ability to retain learnt skills for a long period of time will enable a properly trained Fabrication and welding engineering craft personnel to remain relevant in today's world of work without being gender bias. Thus the purpose of this study is to investigate gender differences in the performance, interest and retention of FWECP trade students in technical colleges in Ekiti State, Nigeria when exposed to cognitive apprenticeship instructional technique. More so, the study is coming at a time when attention is paid to women education.

Statement of the problem

There have been persistent reports of disparity in the performance of male and female students in Fabrication and welding engineering craft practice in technical colleges in Nigeria. This is evidence in the statistics made available by NABTEB which indicates that only 25% of the female students that did the exam passed at credit level and above in year 2016 while 92.7% of male students had credit pass. In year 2017, 30% female student passed at credit level while 81% of male students passed at credit level and above in NABTEB conducted examinations. This persistent disparity in achievement may be as a result of the use of inappropriate teaching methods adopted by teachers (Oyenuga, 2010; NABTEB, 2017).

Research questions

The research questions raised to guide the study are:

(1) Would there be any difference in the achievement mean score of male and female students exposed to FWECP with CAI strategy?
(2) Would there be any difference in the interest mean score of male and female students exposed to FWECP with CAI strategy?
(3) Would there be any difference in the retention mean score of male and female students exposed to FWECP with CAI strategy?

Hypotheses

The null hypotheses tested at 0.05 significant levelformulated to guide the study are:

H_{01}: There will be no significant difference in the cognitive achievement score mean of male and female students in FWECP when exposed to CAI strategy.
H_{02}: There will be no significant difference in the interest score mean of male and female students taught fabrication and welding engineering craft practice with CAI strategy
H_{03}: There will be no significant difference in the mean of retention scores of students taught fabrication and welding engineering craft practice with CAI strategy based on gender.

METHODOLOGY

A quasi-experimental design with a pre-test and post-test non-equivalent comparison group design was adopted. The use of intact non-randomized classes makes the design very suitable for the study. This is because there was no plan to disrupt the schools' calendar. The study was carried out in Ekiti State, Nigeria. The population and invariably the sample for this study was all 64 year two FWECP students in Ekiti State government-owned technical colleges offering FWECP. These comprised 53 male and 11 female students. The simple random sampling technique was adopted for randomly assigning the two technical colleges that offer FWECP to both experimental group and the conventional group in the study.

Instruments for data collection

The instruments used for data collection were the Fabrication and welding achievement test (FWCAT),) and Fabrication and welding interest inventory (FWII). The FWCAT items were adapted from the National Business and Technical Examination Board (NABTEB) 051-1 (sheet metal/structural steelwork, CFW 11 and 14) past question papers. The FWCAT instrument contained 30 test items. The items therein covered only the content aspects of this research study (Welding machines and accessories; Welding joints in all position; Arc welding ferrous and non-Ferrous metals; Building up worn metallic parts using arc welding; Arc cutting of metal).

The Fabrication and Welding interest inventory (FWII) was developed by the researchers to test students' interest in

Fabrication and Welding works. The items were based on a four-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). It contains twenty-five (25) items. Scores obtained in both instruments were converted to percentages (%). The CAIM lesson plans were developed by the researcher for the use of teaching experimental group; this was to ensure standardization and control invalidity that could be caused by teacher variability. The CAIM lesson plan has all six instructional strategies: modelling, coaching, scaffolding, articulation, reflection and exploration built into it.

The FWCAT instrument has been validated by the National Business and Technical Examination Board (NABTEB). NABTEB is an examination body that uses expert test developers and subject specialists in setting their questions and thereafter subject the developed items to various stages involved in validation and standardization of test. In addition, face and content validation were conducted on both instruments viz FWCAT and FWII by three experts from the Department of Vocational and Technical Education, Ekiti State University and two Fabrication and welding engineering craft practice teachers from Technical Colleges in Ekiti State. There suggestions were incorporated into the instruments. The reliability of the instruments was established by testing them on a group of fifteen (15) year 2 (13 males and 3 females) Fabrication and welding engineering craft practice trade students in a Government Technical College, outside the sample space. The internal consistency of the FWCAT was established with the use of Kudder-Richardson Formula 20 (K - R.20); the internal consistency estimate gives a measure of the homogeneity of the items in the instrument. An internal consistency estimate of 0.79 was calculated for the FWCAT. Since the FWCAT was going to be used as a retention test, it was deemed necessary to establish an estimate of temporal stability, using the test-retest reliability technique. A time lag of two weeks between the test and the retest was allowed. The scores of the students on the two different administrations of the test were correlated using Pearson's Product Correlation technique. 'The coefficient of stability computed for the FWCAT was 0.75. Cronbach Alpha was used to determine the internal consistency of fabrication and welding Interest Inventory items by also tried testing it on the students. The reliability coefficient computed for the FWII was 0.83.

Experimental procedure

The study was conducted in four phases: The first phase was the pre-test stage. It was the phase in which the FWECAT and FWII were administered on the subjects in both the experimental and control groups. This phase of the study was done in the first week of the experiment. This exercise provided baseline data on cognitive achievement and interest inventory. The second phase which is the experimental or test phase featured the teaching of the experimental group with the developed CAIM teaching method lesson plan while at the same time, the conventional group was taught the same topics using the usual format, teaching methods and lesson plan as developed by the respective teachers handling the classes.

Fabrication and Welding Engineering craft practice teachers in the experimental school used the researchers' developed lesson plans to teach their group. During the treatment, the control group received no new treatment. In all four major topics were covered in this study, that is Welding machines and accessories; Welding joints in all position; Arc welding ferrous and non-Ferrous metals; Building up worn metallic parts using arc welding; Arc cutting of metal. Teaching for the experimental group was designed to provide a broad-based contextual understanding within which meaningful exploration and constructivists learning could occur.

The experimental groups' methodologies were designed specifically to employ the CAIM elements described earlier. Each laboratory learning activities were deliberately sequenced through modelling, coaching and scaffolding. Also consistent with the CAIM methodology approach, the experimental group students were methodically stimulated to participate in practical classes by sharing ideas on areas of difficulties and defining problems to be solved. For instance, as students identify parts and accessories of welding machines, they were asked by their teachers or more knowledgeable peers to visualize the functions of the parts and accessories. Throughout this process, they were encouraged by their instructor or more knowledgeable peers to verbalize their thoughts on how the machines, components and various categories of accessories function in an arc welding cycle and also explain what could happen when there is components' failure. Furthermore, the fact that the experimental group conducted their practical activities as a team and cooperatively, there is thus active interaction among the students both within and across the teams. This enables the students to reflect on, that is, Arc welding of various ferrous and non-Ferrous metals, taking into consideration different factors and properties of the metals. Regular reflective debriefing sessions were conducted following each exercise. Students were asked to operate different types of welding machines including the usage of the accessories; depending on the topic being treated this allowed them to develop the necessary skills (cognitive and psychomotor). If assistance was needed at any time, the instructor coached them through several checks. The sequencing pattern was followed for all the content area of the instruction. The treatment for this research lasted for ten weeks, while each lesson lasted for 90 min (double periods).

The third phase was the post-test phase. A post-test was administered on both groups using the two instruments by the Fabrication and Welding Engineering craft teachers and their assistants after the treatment. The exercise provided post-test data for the dependent variables (cognitive achievement, and interest) after the treatment. The fourth phase was the administration of the FWCAT version administered on the students during the pre-test phase exactly two weeks after the post-test phase. This was to determine the retention capacity of learnt knowledge by the students. The data obtained from the students' scores were analysed by the use of mean to answer research questions and the usage of analysis of covariance (ANCOVA) for testing the hypotheses.

RESULTS AND DISCUSSION

Research question 1: Would there be any difference in the achievement mean score of male and female students exposed to FWECP with CAI strategy?

Table 1 shows that male students taught FWECP with cognitive apprenticeship instructional method had a mean score of 20.32 and standard deviation of 4.25 in the pre-test and a mean score of 73.41 and standard deviation of 6.19 in the post-test making a pre-test, post-test mean gain in the male students taught with cognitive apprenticeship instructional technique to be 53.09. Female students taught FWCP with cognitive apprenticeship instructional method had a mean score of 19.75 and standard deviation of 2.98 in the pre-test and a post-test mean of 72.00 and standard deviation of 4.83, with a pre-test, post-test mean gain of 52.25. With these results male students taught FWECP with cognitive apprenticeship instructional method had a slightly higher mean score than female students in the cognitive

Table 1. Mean and standard deviation of pre-test and post test scores of male and female students taught FWECP in the cognitive achievement test

			Cognitive apprenticeship instructional method						Conventional method				
	N	Pretest	$\overline{X}$ SD	Posttest	$\overline{X}$ SD	Mean gain $\overline{X}$	N	Pretest	$\overline{X}$ SD	Posttest	$\overline{X}$ SD	Mean gain $\overline{X}$
Male	29	20.32	4 .25	73.41	6.19	53.09	24	20.23	2.82	48.60	8.61	28.37
Female	06	19.75	2.98	72.00	4.83	52.25	05	18.00	2 .00	41.00	2.65	23.00

achievement test. In the same vein, male students taught FWCP with conventional method had their mean scores to be higher than the female students in the Fabrication and Welding Cognitive Achievement Test (FWCAT). This therefore indicates that there was an effect of gender Thus, there is an influence attributable to gender (male and female) on the skill performance of students taught FWECP.

Research question 2: Would there be any difference in the interest mean score of male and female students exposed to FWECP with CAI strategy?

The data presented in Table 2 shows that males had a mean score of 72.41 in the post-test and a mean score of 70.71 in the test for retention with a mean gain of -1.7. The female also had a mean score of 65.25 in post-test and a mean score of 67.00 in the test for retention. The female also had a mean gain of +1.75.The result indicates that though males had higher mean score, the females performed better than male students in the test for retention of learning with a positive mean gain.

Research question 3: Would there be any difference in the retention mean score of male and female students exposed to FWECP with CAI strategy?

Table 3 indicates that male students taught FWECP with cognitive apprenticeship instructional method had a mean score of 27.48with a standard deviation of 6.82 in the pre-test and a mean score of 73.16 and standard deviation of 7.65 in the post interest inventory, making a pre-test, post-test mean gain in the male students taught with cognitive apprenticeship instructional technique to be 45.68. Female students taught FWECP with cognitive apprenticeship instructional method had a mean score of 23.50 and standard deviation of 4.43 in the pre-test and a post-test mean of 90.50 and standard deviation of 3.11, with a pre-test, post-test mean gain of 67.00. Thus female students taught FWECP with cognitive apprenticeship instructional method had their mean scores higher than males in the Fabrication and welding Interest Inventory (FWII).This implies that there was an influence ascribed to on the interest of students taught

FWECP.

H₀₁: There is no significant difference in the mean cognitive achievement scores of male and female students in FWECP when exposed to CAI strategy.

Table 4 shows that the F-value for treatment is 68.003 with significant P at 0.000, which is less than 0.05. The null-hypothesis was rejected at .05 level of significance. Thus there was a significant difference between the mean scores of students taught FWECP trade with CAI technique and those taught using conventional teaching method. The calculated F- value (6.453), significant P (0.014) also indicated that there was a significant difference between the main effects of gender (male and female) on students' achievement in the cognitive achievement test. Thus the null hypothesis of no difference is rejected.

H₀₂: There is no significant difference in the mean interest scores of male and female students taught fabrication and welding engineering craft practice with CAI strategy

Table 5 shows that the F-value for treatment is 123.244, with significant P at 0.000, which is less than 0.05. The null-hypothesis was rejected at 0.05 level of significance. Thus there was a significant difference between the mean scores of students taught FWECP trade with CAI technique and those taught using conventional teaching method in the interest inventory. The calculated F- value (8.231), significant P (0.006), also indicated that significant difference existed in students' achievement based on gender (male and female) in the Fabrication and Welding Interest Inventory (FWII).Hence, the rejection of the null hypothesis.

H₀₃: There will be no significant difference in the mean of retention scores of students taught fabrication and welding engineering craft practice with CAI strategy based on gender.

Table 6 shows that the F-value for treatment is 19.941, with significant P at 0.000, which is less than 0.05. The null-hypothesis was rejected at 0.05 level of significance. Thus there was a significant difference between the mean scores of students taught FWECP trade with CAI technique and those taught using conventional teaching method in the test for retention. The calculated F- value

Table 2. Mean and standard deviation of posttest and retention scores of male and female students taught FWECP.

		Cognitive apprenticeship instructional method						Conventional method				
	N	Posttest	$\overline{X}$ SD	Retention	$\overline{X}$ SD	Mean gain $\overline{X}$	N	Posttest	$\overline{X}$ SD	Retention	$\overline{X}$ SD	Mean Gain $\overline{X}$
Male	29	72.41	6 .19	70.71	5.82	- 1.7	24	48.73	8 .61	51.58	7.79	2.85
Female	06	65.25	2 .25	67.00	4.08	1.75	05	46.00	2 .65	45.67	10.07	- 0.33

Table 3. Mean and standard deviation of pre-test and post test scores of students (male and female) taught FWECP in the fabrication and welding interest inventory.

		Cognitive apprenticeship instructional method						Conventional method				
	N	Pretest	$\overline{X}$ SD	Posttest	$\overline{X}$ SD	Mean Gain $\overline{X}$	N	Pretest	$\overline{X}$ SD	Posttest	$\overline{X}$ SD	Mean Gain $\overline{X}$
Male	29	27.48	6 .82	73.16	7.65	45.68	24	28.92	7 .41	53.00	7.07	24.08
Female	06	23.50	4 .43	90.50	3.11	67.00	05	25.33	3 .78	49.67	.58	24.34

Table 4. Summary of analysis of covariance (ANCOVA) for test of significance of three effects: Treatments, gender and interaction effect of treatments and gender on students' cognitive achievement in FWECP.

Source of variation	Sum of squares	DF	Mean square	F	Sig of F
Dependent variable: Posttest					
Corrected Model	9228.548[a]	4	2307.137	44.829	0.000
Intercept	6192.742	1	6192.742	120.329	0.000
pretest	0.962	1	0.962	0.019	0.892
treatment	3499.768	1	3499.768	68.003	0.000
sex	332.099	1	332.099	6.453	0.014
treatment * sex	0.461	1	0.461	0.009	0.925
Error	3036.452	59	51.465		
Total	249434.000	64			
Corrected Total	12265.000	63			

a. R Squared = .752 (Adjusted R Squared = 0.736)
b. Computed using alpha = 0.05.

(1.158), for gender with significant P (0.286),shows that no significant difference existed in the achievement of students based on gender (male and female) in the test for retention; hence, the acceptance of the null hypothesis.

DISCUSSION

Table 2 provides data for answering research question two. The finding indicates that male students taught fabrication and welding engineering craft practice with CAI technique had higher mean scores than female students in FWCAT. This thus implies that there was an effect of gender on the achievement of students taught fabrication and welding engineering craft practice CAI techniques. In the testing of hypothesis one, as indicated in Table 5, Analysis of covariance (ANCOVA) was employed at confidence level of .05 and calculated F-value (91.03). It was revealed that there was a significant difference in the achievement of students based on gender in FWECP. This implies that cognitive achievement of students in FWECP is gender sensitive

This finding is similar to that of Animasahun (2015) who discovered that male students significantly performed better than females in her study titled 'the effects of

Table 5. Summary of analysis of covariance (ANCOVA) for test of significance of three effects: Treatments gender and interaction of treatment and gender on students' interest in MVMW.

Source of variation	Sum of squares	DF	Mean square	F	Sig of F
Dependent variable: Posttest					
Corrected Model	9356.224[a]	4	2339.056	49.417	0.000
Intercept	12259.456	1	12259.456	259.005	0.000
pretest	241.224	1	241.224	5.096	0.028
treatment	5833.481	1	5833.481	123.244	0.000
sex	389.619	1	389.619	8.231	0.006
treatment * sex	660.569	1	660.569	13.956	0.000
Error	2792.636	59	47.333		
Total	282159.000	64			
Corrected Total	12148.859	63			

a. R Squared =0.770 (Adjusted R Squared = 0.755); b. Computed using alpha = 0.05.

Table 6. Summary of Analysis of Covariance (ANCOVA) for test of significance of three effects: Treatments, gender and interaction effect of treatments and gender on students' retention in FWECP

Source of variation	Sum of squares	DF	Mean square	F	Sig of F
Dependent Variable: Retention					
Corrected Model	5804.050[a]	4	1451.013	30.706	0.000
Intercept	3075.512	1	3075.512	65.083	0.000
pretest	1.341	1	1.341	0.028	0.867
treatment	942.298	1	942.298	19.941	0.000
sex	54.703	1	54.703	1.158	0.286
treatment * sex	1.006	1	1.006	0.021	0.884
Error	2788.059	59	47.255		
Total	252011.000	64			
Corrected Total	8592.109	63			

a. R Squared = 0.676 (Adjusted R Squared = 0.654); b. Computed using alpha = 0.05.

cognitive apprenticeship and critical exploration teaching strategies on basic science students' learning outcomes in selected secondary schools in Osun State, Nigeria'. This also affirms Dorine et al. (2018) and Mwaba et al. (2015) findings that show that disparity exists in the performance of students based on gender in the sciences and related fields, in most cases favouring boys. Generally, male students have been consistently observed to achieve higher than females on vocational and technical achievement trades. This suggests that male students apparently possess greater vocational skills than female students. Male superiority in vocational skills was also established in studies conducted by Ibrahim et al. (2013) and Umunadi (2011).

Furthermore, the data presented in Table 4 provided answer to research question four. It was observed that female students taught Fabrication and welding engineering craft practice with CAI techniques had higher mean scores than male students in the Fabrication and Welding Interest Inventory (FWII). This indicates that there is an effect attributable to gender on the interest of students taught FWECP with CAI techniques. However, Table 6 indicates that there was no significant difference in the mean interest scores of students based on gender (male and female) when subjected to ANCOVA. Thus the difference noticed in the mean of the students (male and female) interest scores was statistically insignificant. Interestingly, the provision of opportunities to interact with course material through the use of appropriate real live tools and equipment cooperatively tends to change the course from a competitive endeavour to one that is more student-centred, and focused on the construction of knowledge in the students (Carol, 2003). Hence, one means of constructing knowledge is to create meaning by doing. Creating support for knowledge construction within the students is a critical component to the success of developing self-motivated, intellectually stimulated learners (Yurdagül et al., 2012).

The data presented in Table 3 provided answer to research question three. Finding revealed that female

students taught FWECP with CAI techniques had higher retention scores than male students in the test of retention. Thus, there is an effect attributable to gender in the test of retention of students taught FWECP with CAI techniques. The employment of analysis of covariance for the testing of hypothesis 3 as indicated in Table 6 at an F-value (11.46), significance of F (0.00) and 0.05 confidence level revealed a significant difference in the retention of knowledge of male and female students exposed to FWECP. This finding further confirmed that the difference observed in the main effect of the retention scores of students based on gender was statistically significant, not due to chance and favouring female students. Thus gender influence affects subjects in the experimental group. The female students tended to be superior to their male counterparts in the retention of FWECP concepts. This finding is at variance with that of Malau-Aduli et al. (2013) who observed a significant gender influence on science concepts in favour of male students in their study titled "Retention of knowledge and perceived relevance of basic sciences in an integrated case-based learning (CBL) curriculum".

On the other hand, the result corroborates the study of Ajai and Imoko (2015) whose findings indicated that female students performed significantly higher than male in the retention test in their study titled "Gender Differences in Mathematics Achievement and Retention Scores: A Case of Problem-Based Learning Method". This study is also in line with that of Lu-Fang (2011) in his study titled 'Gender Differences in L2 Comprehension and Vocabulary Learning in the Video-based Call Program'. The statistic results from the study showed among other findings that, regardless of videotext difficulty, females achieved higher percentage scores than males in comprehension, vocabulary immediate, and vocabulary retention tests.

Quality achievement, retention and Interest in vocational education are essential elements of an educational strategy, method or technique designed to ensure that boys and girls maximize their full potentials (United States Agency for International Development (USAID), (2008). To this therefore, the use of appropriate teaching method and strategies such as CAI technique that will ensure high quality education and success of millions of male and female students is necessary not only in Nigeria but the world at large.

Conclusion

The study revealed that there was significant difference in the achievement and retention of boys and girls in Fabrication and welding Craft Practice Work when exposed to Cognitive apprenticeship Instructional Technique. The difference in achievement was in favour of boys while the difference in interest and retention was in favour of girls.

Recommendations

The following recommendations are hereby made based on the findings: Technical College teachers should inject cognitive apprenticeship instructional technique to the teaching of FWECP. Government agencies responsible for coordinating the activities of technical colleges should organise workshops, seminars and conferences on regular bases for teachers in the colleges on the usage of cognitive apprenticeship instruction and other contemporary student centred teaching methods.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Investigation of primary school teachers' opinion about revised 3rd grade science curriculum in Turkey

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One of the aims of science curriculum is to understand technology that is used in all areas of daily life. Thus, science curriculum should be revised in a feasible and dynamic manner for the quality. The purpose of the study is to investigate primary school teachers' opinions about renewed 3rd grade science curriculum. The sample of the study consisted of 160 4th grade primary school teachers working in public primary schools during 2014 and 2015 academic years. This is a descriptive research design. The data obtained from the surveys were analyzed by using frequencies, percentage, mean and standard deviation. T-test and One-way Anova were used for parametric variables. Findings of the study showed that teachers maintained that the content of the revised 3rd grade science curriculum was adequate and taking science course to the 3rd grade course was the correct decision.

Key words: Science curriculum, 3rd grade science lesson, teachers' opinions.

INTRODUCTION

Education has been defined as the process of changing behaviors. Education is a lifelong process if we consider that the likelihood of behavior patterns can be changed any time. It is expected that there will be a change in the behavior of the individuals after certain education process. Aims, knowledge, behaviors, attitudes and values of individuals can be changed through education (Kaya, 2005). Individuals have to keep up with change, open to technological innovations and be productive in today's world as science and technology make tremendous changes and progress (Etkina et al., 2008). Thus, individuals must take responsibilities to increase the quality of the life, to increase societies consciousness, and to develop their countries. According to Soylu (2004) this is only achieved by nurturing

individuals as productive, innovative, inquisitive and critical citizen through qualified education. Modern education approaches emphasize student-centered learning, cognition, problem solving, and critical thinking. Science courses provide the most sufficient opportunity to students to gain these concepts (Corcoran et all, 2009).

Scientific and technologic development, new application in teaching methods, and the need of continuity of curriculum development activities required revision of the science curriculum (Akdeniz et al., 2004). Thus, National Ministry of Education (2000) mentioned that the science curriculum must be revised by considering these requirements.

The requirements for the revision and development of

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the science curriculum have become necessary in the 2000s. For this purpose, positive and negative aspects of the science curriculum have been evaluated, and the new science curriculum was structured taking these qualifications into consideration. The concept of "technology" has been added to the curriculum, and the name of the course renewed as "Science and Technology" in 2005. Besides, the science course hours have been increased to four hours per week, which were three hours per week in previous curriculum (National Ministry of Education (NME), 2005). The science curriculum was required to be redeveloped as a result of system change in education called 4+4+4 system and current innovations and scientific developments. Thus, some regulations have been made and the name of the course has been changed as "Science".

When the curricula are considered in terms of "science literacy", the aim of "all students are educated as science and technology literate" in the 2005 Science and Technology course curriculum is also maintained in the renewed 2013 Science curriculum. Because of the change in the name of the course, the "science and technology literacy" statement was included in the 2005 curriculum while the "science literacy" statement was used in the 2013 Science curriculum. The scientific process skills have continued to be a dimension of science literacy in both previous and current science curricula (National Ministry of Education, 2005; National Ministry of Education, 2013). While the Science and Technology curriculum consisted of seven learning areas to provide science and technology literacy, the 2013 Science curriculum includes four learning areas. This decline is structured not so much as to create a deficiency in the program, but rather to complement each other.

The 2013 Science curriculum adopts a research inquiry-based learning strategy that allows students to assume responsibility of their own learning, to actively involve learning and teaching process, and to reestablish knowledge in the minds; while 2005 Science and Technology curriculum is based on constructivist learning strategy. The purpose of constructivist science teaching is to adopt students' previous knowledge to new scientific knowledge. Thus, teachers must first try to identify what students know about the new topic already and how they relate their past experience with new topic (Bağcı-Kılıç, 2001). Orhan (2004) stated in his article about science teachers' problem solving skills that constructivist science education is more successful than traditional science teaching.

It was expressed in the 2013 Science curriculum that informal learning should be carried out not only in the school environment but also in students' daily life. Similarly, several studies have mentioned that activities occur out of classroom may provide students with high level thinking skills and increase student awareness through looking at different point of view (Coşkun-Keskin

and Kaplan, 2012). In addition, there was a significant decrease in the total number of acquisitions in the 2013 Science curriculum while there were no changes in the hours of the course. Indeed, there were 807 acquisitions in 2005 Science and Technology course while this number decreased to 266 in the 2013 Science curriculum. Another change in the 2013 science curriculum is the increase in the number of achievements as the class level progresses. This significant difference will make it easier for teachers, who are practitioners of the curriculum, to reach aim of the acquisitions, and provide more permanent learning for students. Thus, it facilitates the transformation of the acquisitions into behaviors.

It can be concluded that the 2005 Science and Technology curriculum is revised in 2013. Also it can be stated that changes in the location of subject areas can be thought of as facilitating the implementation of contextual end-of-topic integrity and application. The Science and Technology course was started in the 4th grade in the 2005 curriculum; however, it starts in the 3rd grade in the 2013 Science curriculum. The purpose of the research is to investigate primary school teachers' opinion about 3rd grade Science curriculum, which was revised in 2013 and gradually started to be applied.

METHODOLOGY

Design of the study

A descriptive model was used in this research, which aimed to investigate elementary school teachers' opinion about 3rd grade Science curriculum. The author applied descriptive model to reveal the existing situation as it is. In this research, both qualitative and quantitative methods were used in the process of collection, analysis and interpretation of the data. Qualitative research is a process that enables qualitative data gathering methods such an observation, interview and document analysis to be used in a realistic and holistic way in the context of the existence of facts and events (Yıldırım and Şimşek, 2006: 147).

Study group

The population of the research is 4th grade teachers, who have been teaching the revised 3rd grade Science curriculum in the public schools affiliated to the National Ministry of Education in the city of Şanlıurfa in 2014-2015 academic year. The sample of the study consisted of 160 4th grade teachers, who are currently working in public primary schools. All of these teachers were selected from teachers who had taught 3rd grade in the previous academic year. Convenience sampling was used to the process of sample selection. Convenience sampling allows the researcher to sample from around the study (Balcı, 2005: 122). The researcher selected a condition that is close and easy to access in convenience sampling method. This sampling method gives speed and practicality to research (Yıldırım and Şimşek, 2006: 156).

Data collection instruments

Two different data collection tools were used in this study, which

Table 1. Comparison of 4th grade teachers' scores about 3rd grade science curriculum based on gender.

Variable	X	SD	t	df	P
Male	107.427	20.565	1.672	158	0.097
Female	112.109	14.854			

N=160; p>0.05.

Table 2. Comparison of 4th grade teachers' opinion about 3rd grade science curriculum based on their place of duty.

New Curriculum	df	Sum of squares	F	P
Place of duty				
Between Groups	2	221.892	0.726	0.486
Within Groups	157	305.770		
Total	159			

p>0.05.

aimed to examine the appropriateness of the renewed Science curriculum. First, personal and open-ended questions were used in the first part of the survey. In the second part, a survey called "Teachers' Opinion about Renewed Science Curriculum Survey" was used to determine the appropriateness of the renewed curriculum. The second part of the survey consisted of 27 items, which has the ability to examine the 3rd grade science curriculum.

The reliability and validity analysis of the survey was conducted by Temli Durmuş and Ok (2014:70) and found that the Cronbach alpha internal consistency was 0.949.

Data collection

Within the scope of the research, the researcher gave verbal directions and the teachers marked the items. After the survey and interview forms were applied, the data were collected and interpreted statistically. Convenience sampling method was applied to the available 4th grade teachers, who have been teaching the revised 3rd grade Science curriculum by asking questionnaire questions.

Analysis of the data

The data of the study were analyzed after the first data collection tool was applied. The author used content analysis method for the purpose of the research. The main purpose of the content analysis is to reach concepts and relationship which can explain the collected data (Yıldırım and Şimşek, 2006: 146). The data were coded by the researcher. Then, the author created themes by using the codes. During the coding process, personal information of the participants was kept confidential and coded in the format of T1, T2, T3…In the next process; the data were transferred to the digital environment to make statistical analysis. The author coded 5 for "Strongly Agree", 4 for "Agree", 3 for "Neither Agree Nor Disagree", 2 for "Disagree", and 1 for "Strongly Disagree". The obtained data are graded from 1 to 5 on the scale used, divided into 5 peaks so that each interval will be 1 point, and the scale is used by using the graded scale based on the range of points corresponding to each option. Percentage, frequency, arithmetic mean and standard deviation of each item were calculated.

FINDINGS

Table 1 shows participants' scores from the scale. The author used independent sample t-test because the data is normally distributed. Independent t-test results were given in Table 1 based on the gender variable.

Table 1 shows that male teachers' scale score was 107,427 and standard deviation was 20,565; while female teachers' score was 112,109 and standard deviation was 14,854. According to the independent sample t-test result, there was no significant difference between male and female teachers' scores ($t_{(158)}$=1.672, p>0.05).

Table 2 shows the 4th grade teachers' opinion about 3rd grade science curriculum based on their place of duty.

A one-way analysis of variance (ANOVA) was conducted to examine 4th grade teachers' opinion about 3rd grade science curriculum based on their place of duty. The result shows that there was no significant difference between groups ($F_{(2, 157)}$= 0,726 p>0.05). In other words, there was no statistical significant difference between teachers' opinions who worked in downtown, county or village.

Table 3 presents the 4th grade teachers' opinions about the sufficiency of the contents of the 3rd grade science curriculum.

According to the findings in Table 3, 62.5% of teachers stated that the content of the science curriculum in 3rd grade is sufficient while 37.5% stated that the content is insufficient. One participant (T124 coded teacher) expressed his opinion as follows "The content of the science curriculum is sufficient for the class level. Also,

Table 3. Opinions about the contents.

Code	F	%
Content is sufficient	100	62.5
Content is insufficient	60	37.5
Total	**160**	**100.0**

Table 4. Creating basis for 4th grade.

Code	F	%
Creates Basis	98	62.00
Not Create Basis	60	28.00
Total	**158**	**100.0**

Table 5. Opinions about the relationship between renewed science curriculum and daily life.

Code	F	%
Sufficient relationship with daily life	102	65.80
Insufficient relationship with daily life	43	27.74
Increase awareness.	10	6.46
Total	**155**	**100.0**

acquisitions are suitable for students' level". On the other hand, another participant (T62 coded teacher) asserted her ideas as follows "It is insufficient. More space should be given to some topics such as Journey to the World of Living and Balanced Nutrition".

Table 4 shows the analysis of answers given by the participants to the question of "Can the 3rd grade science curriculum in practice create the basis for the 4th grade subjects?"

According to the findings in Table 4, most of the teachers (62%) concluded that 3rd grade science curriculum creates basis for 4th grade science curriculum; however, 28% of teachers believed that it does not create basis for the 4th grade curriculum. T124 coded teacher stated her opinion as follows "I think it will. The topics of this year are preparing for the 4th grade and increasing background information". On the contrary T58 coded teacher stated her ideas as follows "I think it would not create basis for 4th grade because 4th grade science curriculum includes more concepts and it can be difficult to understand".

Table 5 presents the analysis of teachers' opinions about the relationship between renewed science curriculum and daily life.

Table 5 shows that most of the teachers (65.80%) accepted that science curriculum sufficiently related to the daily life; nonetheless, 27.74% of teachers stated that science curriculum is insufficiently related to daily life. One participant (T92 coded teacher) expressed her ideas as follow "In daily life, they learn the sources of sound and light in the environment, the tools and materials related to them, and the functions of these tools, so they are related to daily life". Similarly, T9 coded teacher stated that "Students will be more conscious because the topics related to their daily life." On the other hand, T32 maintained that "Some science topics are not related to daily life or its relationship is insufficient".

Table 6 presents analysis of teachers' opinion about whether the duration of the third grade science course is sufficient in terms of learning the topics permanently.

According to Table 6, majority of the teachers (82.78%) thought that the duration of the third grade science course is sufficient to learn the subjects more permanently. On the contrary, 17.82% of teachers stated that it is insufficient. T113 coded teacher maintained that "Time is enough. As the topics are simple, repetitions, applications, evaluations are made permanent. We do not know how to fill the course because duration of the course is too long". On the other hand, another teacher (T15) stated that "Duration of science course is insufficient based on Constructivist approach. Students should learn this course by doing. Time runs out when

Table 6. Data related to duration of science course.

Code	F	%
Sufficient	125	82.78
Insufficient	26	17.22
Total	**151**	**100.0**

Table 7. Teachers' opinions about starting science curriculum at 3rd grade.

Theme	Code	F	%
	It is right	76	34.54
	It creates basis for 4th grade	37	16.81
	Science topics are lessened	24	10.90
Positive	It creates curiosity	19	8.63
	It increases awareness	9	4.09
	It increases awareness to the environment	7	3.18
	It provides learning through experience	6	2.72
	There is no difference	27	12.27
Negative	It should start at 4th grade	15	6.81
	Total	220	100.0

Table 8. Deficiencies in the science curriculum.

Code	F	%
Science curriculum is suitable for student level	45	21.32
The times for the units are too long	41	19.49
Topics are not enough for 3rd grade	29	13.74
Topics should be related to Daily life.	27	12.79
It is not appropriate for student level	21	9.95
Inadequate observation and experiment	19	9.00
Lack of related samples	9	4.26
Inadequate curriculum	7	3.31
Information are not understood	6	2.84
There are too much details	4	1.89
Lack of evaluation part	3	1.42
Total	211	100.0

using student-centered approach".

Table 7 shows the frequency and percentage of teachers' answers for the question "What is your opinion about starting Science curriculum at 3rd grade?"

According to Table 7, majority of the teachers provide positive opinions about starting science curriculum at 3rd grade. It was concluded from the table that 34.54% of the teachers believed that this implementation is right, 16.81% stated that it creates basis for 4th grade, 10.90% mentioned that science topics are lessened, 8.63% indicated that it creates curiosity, and 4.09% agreed that it increases awareness. However, 12.27% of the teachers

stated that there is no difference in the curriculum. One participant (T71) shared his ideas as follows "I think it is beneficial. It increases students' interest to the lesson and stimulates curiosity and leads them to investigate and think". Similarly, T35 postulated that "It increases student participation through observation". T17 stated that "3rd grade science curriculum includes several topics which take students attention". On the contrary, T23 indicated that "I think there are no major changes in the curriculum. These topics were in the Life Science before and now it is in Science curriculum".

Table 8 shows teachers' responses about the question

"What are the deficiencies seen in the renewed science curriculum?".

According to Table 8, 21.32% of the teachers stated that science curriculum is suitable for student level. On the other hand, 19.49% of the teachers said that "the times for the units are too long", 13.74% of the teachers stated that "Topics are not enough for 3rd grade", 12.79% of the teachers stated that "science topics are not related to daily life", 9.95% of the teachers mentioned that "science curriculum is not appropriate for student level", and 9% of the teachers stated that "science curriculum has inadequate observations and experiments". According to T37 coded teacher, "Science curriculum is appropriate for the student level, but the biggest problem is insufficient equipment. Thus, we cannot make activities". Another teacher, T21, shared her opinions as follows "Lesson times are too long, we do not know how to fill it". T98 coded teacher stated that "The biggest problem is crowded class, and we are not able to fully control and secure our experiment". These findings showed that deficiencies are not only due to science curriculum but also the physical conditions of the school.

DISCUSSION

The purpose of the study is to investigate primary school teachers' opinion about 3rd grade Science curriculum, which was revised in 2013. Thus, the researcher examined teachers' opinions about deficiencies in the science curriculum, what effect does the program have on students, duration of the curriculum and the sufficiency of its content, whether gender and place of duty affect their opinion.

The findings revealed that there was no significant difference in the evaluation of the new Science Curriculum based on the gender of primary school teachers. It can be concluded from this finding that being male of female does not affect teachers' opinion about new science curriculum (p>0.05). Similarly, the results showed that there was no significant difference in the teachers' opinions about revised science curriculum based on place of duty.

4th grade teachers expressed that the content of the revised 3rd grade science curriculum is sufficient; while some of them asserted that duration of the course is too long. On the other hand, other teachers stated that duration of the course is fine when students are learning through by doing based on constructivist approach. Erdoğan (2005: 405) stated in his research that teachers' activities in the classroom in previous years have started to be practiced in laboratory with the new science program. Also, teachers emphasized the increased communication between group work and teacher-student and student-student in the classroom (Duschl, 2007). Revised science curriculum supported students' active participation during the learning process. In addition, revised science curriculum is student-centered and emphasizes the importance of learning through experience.

The majority of the teachers stated that 3rd grade science curriculum can create a basis for 4th grade science topics. Similarly, Ünişen and Kaya (2015: 569) concluded that most of the teachers expressed positive views on the starting science curriculum in the 3rd grade. In our research, the positive attitudes of the teachers towards the 3rd grade science curriculum are compatible with the previous researches.

The majority of the teachers believed that revised science curriculum related to daily life, and students will be able to create solutions to the problems they faced. On the other hand, some teachers believed that there are some topics which are not related to students' daily life (Stephen, 2014). In 2013 science curriculum, the subjects were simplified and the numbers of acquisitions were reduced. Because the number of lessons for per acquisition increased; it has led to positive opinions among teachers. It can be concluded that, starting science curriculum in the 3rd grade and giving daily life related examples has positive impacts on students (Eskicumalı et al., 2014: 1088). According to Gürdal (1992: 186), kids are most curious between 6-14 years old and they are more curious about science topics. Therefore, concrete examples related to daily life should be given to students, science literacy and the relationship between science-technology-society-environment should be given, a system of thought that can connect science issues should be established during this period.

4th grade teachers stated that renewed 3rd grade science curriculum is appropriate to the students' level. In this research, most of the participant agreed that science curriculum is student-centered and appropriate to 3rd grade students' level; and it considers students' development. In addition, renewed science curriculum allows students to discover the information and encourages group work (Tüysüz and Aydın, 2009: 45). Similarly, Anagün et al. (2015: 132) concluded that pre-service primary school teachers thought that the content of the renewed science curriculum was suitable for students.

Primary school teachers complained of insufficient equipment, observation and experiment. Several studies stated that teachers have faced some problems due to lack of equipment (Kazu and Aslan, 2012: 700; Karakuş et al., 2014: 225). This problem is one of the most common problems in the implementation of the curriculum. Lack of the time for implementing activities and lack of materials for conducting experiments are reported as the most common deficiencies in the new science curriculum. Teachers who are working in low-profile schools asserted that they could not implement the renewed science curriculum. In his research about science attitude and behavior, Öz (2007: 145) stated that the problems that he faced are inadequate materials and lack of sufficient information about renewed curriculum. The results of Karatay et al. (2013: 242) research about

comparison of 2005 and 2013 science curriculum, Toraman and Alcı (2013: 19) study about science teachers' opinions about renewed science curriculum, and Özata and Özkan's (2014: 239) research about comparison of 2005 and 2013 science curriculum support the result of this study.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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