European Journal of Educational Sciences, EJES

March 2022

European Scientific Institute, ESI

The content is peer-reviewed

March 2022 Edition Vol. 9, No. 1

ISSN 1857- 6036

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Can Teachers' Job Satisfaction Be Ensured Despite Economic Inadequacies? The Impact of Positive Psychological Capital

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Doi:10.19044/ejes.v9no1a1 URL:http://dx.doi.org/10.19044/ejes.v9no1a1

Submitted: 06 October 2021
Accepted: 16 December 2021
Published: 31 March 2022

Abstract:

This research examines the impact of teachers' positive psychological capital (PPC) on their job satisfaction (JS) levels. In the study, the relational survey model was used by conducting hierarchical regression analysis. The sample of the study consists of randomly selected 376 teachers in Batman, Turkey. The data were collected with the "Positive Psychological Capital Scale" and "Minnesota Job Satisfaction Scale (MSQ-Short form)". According to the results, the PPC levels (total scores and dimensions) of the teachers are at a very high level; only the optimism dimension of the PPC scale and JS were found to be at a high level. In the regression analysis, the model (Model 6) that measures the effect of all dimensions of PPC on JS is significant. This finding implies that PPC is a significant predictor on JS and approximately 22% of the total variance in job satisfaction is explained PPC. The results of the study imply that self-efficacy and optimism components of PPC can be used to increase JS of teachers even the economic needs are not adequately met.

Keywords: Positive psychological capital, job satisfaction, economic inadequacies, teacher

Introduction:

Global events such as wars, crisis, chaos, etc. that have occurred in the process of rapid change from industrialization to today have caused changes in organizational structures. This rapid change process has revealed organizational competition. Organization managers who wanted to be successful in this competition realized the potential of people (Anik & Tosten, 2017). This situation resulted in psychological pressure on the employees of the organization in order for the organization to survive (Yalcin, 2019). The need to change the roles of the employees within the organization and their adaptation to these roles became important for the continuity of the organization. In the change of these roles, the importance of meeting the expectations and needs of the employees has been realized to get a high level of efficiency from them. With the realization of the importance of "individual" for organizational structures, there has been a focus not only on

the development of the physical aspects but also on the psychological aspects of the human being. Thus, the importance of new types of capital, such as human, social, cultural and positive psychological capital, which takes the human factor into account, has been continuously increasing until today (Luthans & Youssef, 2004).

The researches in the related literature emphasize that the PPC levels of the teachers should be increased to have a high job satisfaction in educational organizations. These kinds of findings imply important relationships between PPC levels and job satisfaction of employees (Erkus & Findikli, 2013). Luthans et al. (2008), in their study on psychological capital and job satisfaction, determined that there is a positive relationship between these two variables. Moreover, a significant relationship has been observed in some studies in the sub-dimensions of PPC. There are some other researchers who have reached important findings on this subject. In these studies, it has been revealed that there is a positive relationship between the level of job satisfaction and the dimensions of hope and resilience in the PPC (Larson & Luthans, 2006). Similarly, significant positive relationships have been reported between job satisfaction and the optimism dimension of the PPC (Youssef & Luthans, 2007). This study is examining the role of positive psychological capital levels of teachers on their job satisfaction level.

Literature Review

The concept of positive psychological capital (PPC) is accepted as one of the important types of capital that has been the subject of research in recent years. A positive psychological approach that emphasizes efforts to improve negative situations in people and the importance of individual happiness and personal development aims to ensure that employees continue a happy life within the organization. In this context, PPC has taken its foundations from the positive organizational behavior approach that takes into account the development of positive behaviors of employees in the organization (Erkus & Findikli, 2013). PPC based on positive psychology and positive organizational behavior approaches was concerned with the strengths of employees and their potential characteristics (Luthans & Youssef, 2007). Since PPC aims to increase organizational productivity, it can be defined as any kind of capital that increases the productivity of employees (Oruc, 2015; Tosten, 2015).

PPC can be expressed as a combined superstructure, and it consists of four main sub-dimensions: the confidence of the individual towards himself in showing the necessary effort to be successful in difficult conditions (self-efficacy), positive judgments that he will be successful at this time and in the future (optimism), pursuing its goals to be successful and re-evaluating its goals when necessary and seeking different ways to achieve these goals (hope), the ability to return to the previous state after losses to be successful in the face of problems and changes (resilience) (Cinar, 2011). Thrust and extroversion dimensions are added to these sub-dimensions, which contribute to the employee's awareness of their responsibilities, their efforts to solve problems, and their strong communication with their environment (Tosten & Ozgan, 2014).

The school organization needs to determine the the components of positive psychology capital of teachers, who raise the generations and are among the important components of the education sector. Positive psychological capital approach aims to increase efficiency in the education sector by focusing the positive aspects of teachers (Kilic, 2019). For a better quality education, it is important to increase the positive psychological capital of school staff, especially teachers. Employees with high positive psychological capital are happy and work effectively in the workplace. A happy teacher at work may experience more satisfaction. The teacher's attitude towards his profession, which affects the whole society, must be positive. In order to develop a

positive attitude, the feeling of satisfaction should be high. According to researchers, job satisfaction of teachers can be defined as satisfaction or dissatisfaction of teachers with their jobs (Vural, 2004) or attitude of teachers towards their students and school (Tasdan & Tiryaki, 2008). Another important factor in organizational life is the satisfaction of employees with their job. The better performance of the employees requires the employee to be satisfied. The concept of "satisfaction" mentioned here means reaching the inner satisfaction of the person, that is, the realization of his desires. At the same time, the feeling of satisfaction can only be felt by the individual and plays an important role in providing the individual's inner peace (Iscan & Timuroglu, 2007). In that sense the main determinant of job satisfaction is the needs of individuals and to what extent these needs are met (Celik & Gursel, 2017). Job satisfaction is the result of an individual's attitudes towards his job (Balci, 1985). Job satisfaction is closely related to employee expectations from the job, the rewards the job provides, and psychological agreement (Bingol, 1996). Meeting the needs of employees increases both productivity, job satisfaction (Basaran, 1991) and motivation (Han, Tosten & Elcicek, 2021). The rate of meeting many expectations in working life such as wages, promotion, social security, job security, and the quality of work relations affects job satisfaction (Asik, 2010). When employees' expectations from the job are met, job satisfaction increases and corporate goals are realized more efficiently (Tengilimoglu, 2005). The satisfaction of the people in the workplace with their job is important both for the happiness and peace of the employees and for the success of the organization since it affects the performance of the employee positively.

Anyone who loves his job will show a more positive attitude towards that job and act more carefully, in a planned and methodical manner. This approach will lead him to success, so he will experience more job satisfaction (Sinangil, 1998). Employees work with more positive feelings in organizations that have a fair wage system and promotion policy in line with their expectations, and this leads to a positive increase in job satisfaction (Caliskan, 2005). Fair wages according to what the job wants from the person, the ability of the individual and the economic structure of the society have a positive effect on the attitude of the employee towards his job (Sevimli & Iscan, 2005). Providing teachers' job satisfaction is necessary to increase teacher performance (Gundogdu, 2013). Job satisfaction affects the physical and mental health of the employee, the working environment and productivity of the organization, the peace of the society, and its economic development (Erdogan, 2004). Providing job satisfaction in the organization is both a necessity for the continuity of the organization and the duty of the organization for the success of the society and individuals (Ogretmen, 2013). Individuals with a high level of job satisfaction develop positive attitudes about their job on the contrary, employees who are not satisfied with their job show a negative attitude towards their job (Arisoy, 2007). The most prominent form of job dissatisfaction is behaviors such as low productivity, slowdown in work, increased absenteeism and occupational accidents, disruption of work discipline, careless use of resources, and increased employee complaints (Yilmaz & Ceylan, 2011). Job dissatisfaction causes employee turnover, labor turnover, worker problems, theft, worker complaints and an unfavorable organizational climate (Tikici, 2005).

Methods

Sample, data collection, data source, empirical model will be discussed.

Research model

The relational survey model was used in this study. In this model, it is aimed to reveal the relationships between variables. Hierarchical regression analysis was used in this study. In this way, it was possible to determine the contribution of each dimension of positive psychological capital to the total effect.

The Universe and the Sample

The universe of the research consists of 8882 teachers working in public schools in Batman in 2020. Its sample consists of 376 primary and secondary school teachers selected by the simple random method. The teachers participating in the study were 178 women (47.3%), 198 men (52.7%) by gender; according to marital status, 204 married (54.3%), 172 single (45.7%); according to their age, 192 teachers are between the ages of 22-29 (51.1%); 154 aged 30-39 (41%); 28 people aged 40 and over (7.4%). When the distribution of the sample is examined, it is seen that the ratios of women-men and married-single are very close to each other in terms of gender and marital status; in the age distribution, it is seen that the group under the age of 40 is over 90%, so the participants are mostly young teachers. It can be claimed that Batman, which is an Eastern province, reflects the universe in this respect, as the number of first appointments is high.

Data Collection

Two different scales were used to collect research data. The first scale is the "Positive Psychological Capital Scale" developed by Tosten and Ozgan (2014). The scale consists of 26 items in a five-point Likert type. The scale consists of six sub-dimensions. These are self-efficacy, resilience, optimism, hope, trust, and extroversion. In the exploratory factor analysis of the scale KMO value of the scale was calculated .91; Barlett test .00 ($p < .01$); the explained variance was 61.6%. As a result of the confirmatory factor analysis (CFA), it was understood that the model fit well according to the fit indices "($x2 = 728.83$, $N = 308$, $sd = 285$, $p = 0.00$; RMSEA; 0.071, SRMR; 0.13, GFI; 0.85, AGFI; 0.81, CFI; 0.96, IFI; 0.96, NFI; 0.093; $\varkappa 2/df = 2.56$)". "Minnesota Job Satisfaction Scale (MSQ-Short form)" was developed by Weiss, Dawis, England and Lofquist (1967) and adapted to Turkish by Oran Baskaya (1989). The scale consists of 20 5-point Likert-type items. The scale consists of two dimensions; "internal satisfaction (1, 2, 3, 4, 7, 8, 9, 10, 11, 15, 16, 20) and external satisfaction (5, 6, 12, 13, 14, 17, 18, 19)".

Data Analysis

The research data were transferred to the SPSS program and made ready for analysis. Cronbach's Alpha values were examined within the framework of the reliability analysis of the data. Cronbach's Alpha value of the 26-item positive psychological capital scale is .91; The Cronbach's Alpha value of the 20-item job satisfaction scale was calculated as .91. According to these results, it was concluded that the data were reliable so the other analyzes were conducted.
According to the aim of the research, mean and standard deviation values of the scales and hierarchical regression analysis were used. While conducting hierarchical regression, the required assumptions to reach reliable results were examined. First, the assumption of sufficient sample was checked. According to Stevens (2009), the sample size should be 15 times the number of independent variables. In the model in which 6 dimensions of positive psychological capital were used as independent variables. In this sense, 90 samples are sufficient for 6 independent variables. The number of samples used in the study (376) is well above this and meets this assumption. For the normal distribution assumption, the skewness and kurtosis coefficients of the scales were

examined. It has been observed that kurtosis values are high (12.711) in some of the dimensions of the psychological capital scale. Since the skewness and kurtosis values should be in the range of +2 and -2 to ensure the normal distribution assumption (George & Mallery, 2010), the extreme values were examined and the normality was checked by removing the extreme values from the data set, respectively. By removing the data numbered 37 and 9, respectively, from the data set, the skewness and kurtosis values came to the range of +2 / -2 and a normal distribution was achieved. Another assumption is that there is a linear relationship between dependent and independent variables. When the correlation values and scatter diagram were examined, it was seen that this assumption was fulfilled ($p < .01$; $r > .30$). Another assumption is that there is no multi-linearity problem. This situation can be observed by two methods. The first is that there must be no high level of correlation between dependent and independent variables (should be $r < .09$). In this respect, it has been observed that the assumption is confirmed. The second way is to look at VIF and Tolerance values. VIF values are expected to be less than 12; Tolerance values greater than 0.2. It was understood that the assumption was confirmed in terms of both values (VIF <2.74; Tolerance> 0.37) (Cevahir, 2020). The assumptions required for the regression analysis were tested in this way and it was determined that the assumptions were met.

Findings

Two variables were used in the study. The mean and standard deviation values of these variables are given in the table below.

Table 1. The mean and standard deviation values of these variables

Variables	$\overline{X}$	**Sd**	**Level**
Psychological Capital	4.41	.43	Very High
Self-efficacy	4.51	.48	Very High
Optimism	4.17	.73	High
Thrust	4.64	.43	Very High
Extroversion	4.37	.55	Very High
Resiliency	4.38	.58	Very High
Hope	4.47	.55	Very High
Job Satisfaction	3.83	.63	High

When the table is examined, the positive psychological capital levels (total scores and dimensions) of the teachers are at a very high level; only the optimism dimension of the positive psychological capital scale and job satisfaction were found to be at a high level.

The answers given to the item "I can make a living with my current salary" directed to the participants within the scope of the research contain remarkable results. The number of those who replied “I agree” with this item is 82 (21.8%), the number of those who replied “I am undecided” is 65 (17.3%), and the number of those who replied “I do not agree” is 229 (60.9%). These results show that participant teachers are mostly not satisfied with their salary. A teacher's salary in Turkey is around 680 USD in 2021.

The determination of the predictive level of job satisfaction on the dimensions of positive psychological capital, which constitutes the main purpose of the study, was tested with the hierarchical regression model. The dimensions of psychological capital were included in the model,

starting from the self-efficacy dimension, and whether each dimension contributed significantly to the model was examined. The findings are presented in the table below.

Model	R	Adjusted R Square	R Square Change	F	F Change	Sig	Sig. F Change
1*Self-efficacy	.394	.153	.155	68.739	68.739	.000	.000
2 *Self-efficacy *Optimism	.458	.205	.054	49.450	25.633	.000	.000
3 *Self-efficacy *Optimism *Thrust	.468	.212	.009	34.712	4.350	.000	.038
4 *Self-efficacy *Optimism *Thrust *Extroversion	.471	.214	.003	26.485	1.627	.000	.203
5 *Self-efficacy *Optimism *Thrust *Extroversion *Resiliency	.476	.216	.004	21.672	2.103	.000	.148
6 *Self-efficacy *Optimism *Thrust *Extroversion *Resiliency *Hope	.478	.216	.002	18.201	.884	.000	.348

The table shows that the model (Model 6) that measures the effect of all dimensions of positive psychological capital on job satisfaction is significant (p<.05; F=18,201). When we look at the predictive power of all dimensions of positive psychological capital on job satisfaction, it is seen that it is about 22% (R=.48; R^2=.22).

Considering the shares of the dimensions of positive psychological capital in this effect, the following findings were found, respectively:

Self-efficacy is a significant predictor on job satisfaction (P <.05; F= 68.739) and has a predictive power of approximately 15% (R = .39; R^2 = .15);

Optimism is a significant predictor of job satisfaction (Pc> .05; Fc = 25.633) and has a predictive power of approximately 5% (R = .46; R^2 = .054);

Trust is a significant predictor of job satisfaction (Pc <.05; Fc = 4.350) and has a predictive power of about 1% (R = .4; R^2c = .009);

Extraversion is not a significant predictor of job satisfaction (Pc>.05; Fc = 1.627; R^2c=.003);

Resilience is not a significant predictor of job satisfaction (Pc >.05; Fc = 2.103; R^2c=.004);

Hope is not a significant predictor of job satisfaction (Pc> .05; Fc = .884; R^2c = .002).

As can be understood from these findings, positive psychological capital is a significant predictor on job satisfaction and approximately 22% of the total variance in job satisfaction is

explained by positive psychological capital. Within the positive psychological capital dimensions; self-efficacy, optimism and thrust dimensions are significant predictors of job satisfaction, while extroversion, resilience and hope dimensions are not significant predictors of job satisfaction. Self-efficacy has the highest share among the dimensions that have a significant impact with 15%.

Conclusions and Discussion

This research basically examined the relationship between positive psychological capital and job satisfaction, which are two important factors for teachers. According to the research results, teachers' positive psychological capital level and their job satisfactions are high. In the study, the trust dimension of the positive psychological capital scale has the highest mean. In some similar studies, it has been observed that the dimension of trust has the highest mean (Yalcin, 2019; Kelekci & Yilmaz, 2015). It can be claimed that the high level of trust is due to teachers' awareness of their responsibilities and their determination to deal with problems. At the same time, a study by Ocak, Guler and Basim (2015) found that teachers' positive psychological capital levels were high in terms of hope, optimism, resilience and self-efficacy.

One of the important findings of this study is the positive and significant relationship between teachers' positive psychological capital levels and their job satisfaction levels. This result is similar to the findings reported by many studies in the literature (Cakmak & Arabaci, 2017; Erkus & Findikli, 2013; Akcay, 2012; Luthans, Norman, Avolio & Avey, 2008; Youssef & Luthans, 2007; Larson & Luthans, 2006). For example, Luthans et al. (2008) reported significant positive relationships between psychological capital and the level of job satisfaction. Moreover, Larson and Luthans' (2006) research revealed a positive relationship between job satisfaction and positive psychological capital's hope and resilience dimensions. Youssef and Luthans (2007) similarly found a significant positive relationship between job satisfaction and optimism. Cetin (2011) also reported a positive relationship between job satisfaction and optimism in his study in Turkey.

In the study, it was concluded that teachers' positive psychological capital levels play an important role and it is an important predictor on job satisfaction. According to the literature job satisfaction is an important factor for job performance (Gundogdu, 2013). Providing job satisfaction in the organization is both a necessity for the continuity of the organization and the organization's duty for the success of the society and individuals (Ogretmen, 2013). Therefore, it is important to know the factors that increase teachers' job satisfaction and to strengthen them. It is a remarkable result that positive psychological capital predicts job satisfaction by 22% in this study. Especially the high level of predictive power of self-efficacy and optimism dimensions can be interpreted as these aspects are strong aspects for the Turkish society.

The items in the self-efficacy dimension of the positive psychological capital scale are measuring the awareness of the person's job and himself. In this respect, the fact that especially the self-efficacy dimension is predicting job satisfaction significantly (15%) in the study explains the high job satisfaction levels of teachers despite the current economic conditions. At that point, another result obtained within the scope of the research is that the teachers consider that their salaries are not sufficient for their livelihood (approximately 61% of the participants). However, the rate of meeting many expectations in working life, such as wages, promotion, social security, job security, and the quality of work relations, affects job satisfaction (Asik, 2010), and fair wages positively affect the attitude of the employee to his job (Sevimli & Iscan, 2005). Although participating teachers consider teaching economically insufficient, it is understood that their job

satisfaction levels are positively affected by the high levels of "self-efficacy and optimism", which are among the positive psychological capital components.

The research is particularly original and remarkable in this respect. Accordingly, it can be claimed that it is possible to provide teachers' job satisfaction in different ways even when economic conditions cannot be fully met. Especially in economically underdeveloped countries, it is important to find alternatives in such cases. In this sense, in cases where economic needs are not adequately met, self-efficacy and optimism components of positive psychological capital can be benefited to increase job satisfaction of teachers.

Limitations and Implications

One of the limitations of this research is related to the scales. We used two scales in the study. The findings of this research can be confirmed by using different measurement tools such as PPC and job satisfaction scales. Another limitation of the study is related to the sample group of the research. This research was carried out by collecting data from teachers working in Batman province, but an inference was made for Turkey in general. Although the sample group is diversified in this study, it is recommended to work on a more comprehensive sample for a country-wide macro-level evaluation. At this point, future researchers can carry out more comprehensive studies by including larger sample.

Acknowledgements: This paper was presented as an oral presentation at the 4th Global Conference on Education and Research (GLOCER, 2021) on June 8-10, 2021.

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Investigation of Primary School Children's Views of Life During the COVID-19 Pandemic Through Metaphors

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Doi:10.19044/ejes.v9no1a11 URL:http://dx.doi.org/10.19044/ejes.v9no1a11

Submitted: 03 September 2021
Accepted: 28 February 2022
Published: 31 March 2022

Abstract:

Global epidemics bring about problems that affect the lives of all individuals to a great extent. Although there have been global epidemics at different times, especially in the last two decades, primary school students are faced with such a situation for the first time. In order for students to manage this process in a healthy manner, it is important to see life through their eyes. It is necessary for both decision makers and practitioners to refer to students' own comments and statements in order to see the traces of the effects of the measures taken on behalf of the students on their views. Determining primary school students' views of the concept of life in this process is extremely important in terms of seeing and interpreting the process from their perspective and planning the continuation of the process. In the current study, the metaphors that primary school students developed regarding the concept of life during the pandemic and the explanations they brought to these metaphors were examined. In the study, it was determined that the students were able to explain the concept of life in the COVID-19 period using different metaphors and qualifiers. It was seen that metaphors were gathered under the categories of being restricted, disruption of order, feeling threatened**,** and despair. It was concluded that primary school students evaluate life predominantly negatively during the COVID-19 period.

Key Words: Primary school, Education, Metaphor, Covid- 19

Introduction

Metaphor is the main mechanism through which we understand abstract concepts and reason in an abstract manner (Lakoff, 1994, p.251). Metaphor is also defined as understanding one conceptual field in terms of another conceptual field from the perspective of cognitive linguistics (Kovecses, 2010, p.4). The suggestion that metaphor is a part of ordinary thought as well as of language has become popular with the definition of conceptual metaphor (Gibbs, 2011). Our ordinary conceptual system, in which we both think and act, is fundamentally metaphorical in nature (Lakoff, & Johnson, 2008, p.3). Metaphors are also constructive in that they facilitate the creation and interpretation of social reality. In fact, metaphors shape how we see and make sense

of the world by guiding our perceptions, conceptualizations, and understanding of one thing in the light of another (Putnam et al., 1999). Metaphors reflect the transfer of knowledge from well-known areas to lesser-known areas, and therefore, serve as important mechanisms for acquiring new knowledge (Vosniadou, 1987). Metaphor allows us to understand a relatively abstract or an inherently unstructured subject in terms of a more concrete or at least a more structured subject. Many topics, from the most ordinary scientific theories to the most complex scientific theories, can only be understood through metaphor (Lakoff, 1994, p.251).

Two domains that are involved in the conceptual metaphor have special names. The conceptual domain in which we draw metaphorical expressions to understand another conceptual domain is called the source area, and the conceptual domain understood in this way is called the target area. Conceptual metaphor consists of two conceptual domains in which one domain is understood in terms of the other. A conceptual domain is any coherent organization of experience (Kovecses, 2010, p.4). According to Conceptual Metaphor Theory, metaphors are divided into three according to their functions as structural, ontological and orientational metaphors. Structural metaphors involve structuring one type of experience or activity in terms of another type of experience or activity. Ontological metaphors involve projecting the status of an entity or a matter on something that does not inherently have that status. Orientational metaphors construct concepts linearly, orienting them according to non-metaphorical linear orientations (Lakoff, & Johnson, 1980). Koveceses (2010, pp. 37-40), on the other hand, explains the types of metaphors as follows: 1) The thing which is the source in the structural metaphor provides a relatively rich information structure for the target concept. In other words, the cognitive function of these metaphors is to enable speakers to understand target A through the structure of source B. 2) Ontological metaphors provide much less cognitive construction for target concepts than structural ones. Their cognitive task appears to be "just" to give a new ontological status to general categories of abstract target concepts and to generate new abstract entities. 3) Orientational metaphors provide less conceptual structure for target concepts than ontological ones. Their cognitive job is to make a coherent set of target concepts in our conceptual system. The name "orientational metaphor" derives from the fact that most metaphors that serve this function relate to basic human spatial orientations such as up-down, centre-periphery, and so on.

In the last two decades, three types of coronavirus have emerged in the world, and there have been epidemics that have caused significant global health problems (Guarner, 2020). Two of these epidemics were Severe Acute Respiratory Syndrome (SARS) in 2002-2003 and Middle East Respiratory Syndrome (MERS) in 2011 (Prompetchara, Ketloy, & Palaga, 2020). The third is COVID-19, a new pneumonic disease first seen in Wuhan, China's Hubei Province, in December 2019 (Park, Thwaites and Openshaw, 2020). The methods of combating this new pandemic include restrictions to prevent the transmission of COVID-19, individual and environmental measures, detecting and isolating cases, contact reduction and quarantine, vaccines and treatments, and social and physical distancing measures (World Health Organization [WHO], 2020).

Schools are one of the important environments where the right attitudes and behaviours can be taught to children during the pandemic (Högberg et al., 2019). Health and education are closely related (Yamada et al., 2019). Recently, the measures implemented in the management of the pandemic have been on the agenda of our country and of the whole world. This process has directly affected children who have to spend most of their lives at home as schools started to carry out their educational and instructional activities by means of the tools of distance education.

School closures, lack of outdoor activities, isolation, physical distancing, abnormal eating and sleeping habits are likely to disrupt children's usual lifestyles and can potentially promote

monotony, boredom, impatience and a variety of neuropsychiatric symptoms. In addition, the possibility of negative changes in the behaviours of children who cannot interact with peer groups creates anxiety (Ghosh at al., 2020, Gupta, & Jawanda, 2020). Due to the pandemic, primary school students were allowed to go out within certain time limits. In this process, in addition to distance education, primary school students were able to go to school only two days a week for a certain period of time. It is extremely important to be able to determine the experiences of students and their views of life in this process in terms of creating a resource for the healthy management of the process.

The current study aims to investigate primary school students' views of life during COVID-19 period through metaphors. To this end, an answer was sought to the question "What are the metaphors and metaphor explanations of primary school students about the concept of life in the COVID-19 period?". The research question is attempted to be explained with the following sub-problems:

1. Through which metaphors do primary school students define the concept of life in the COVID-19 period?
2. What are the metaphor explanations of primary school students regarding the concept of life in the COVID-19 period?
3. Under which conceptual categories are the metaphors that primary school students use to describe the concept of life in the COVID-19 period are gathered?

Method:

Research Design

The use of research methods and methodologies is extremely important in research models which are defined as procedures that enable data collection, analysis and interpretation methods to be supported with comprehensive assumptions (Creswell, 2014, p.3). Systematization of research stages (observation, analysis, forming questions, evaluation, etc.) is important for following a controlled way in the research and ensuring that the measurement tools are appropriate and reliable (Fraenkel, Wallen, & Hyun, 2012, p. 7). In the current study, qualitative research method was used in order to determine primary school students' views of life in the COVID-19 period.

Study Group

In this study carried out in the province of Van, the data obtained from the Van Chamber of Commerce and Industry (VATSO, 2020) were used while selecting the study group. Considering the number of students at schools and in classrooms throughout the province, priority was given to the five districts with the highest student density. Then using the random sampling method, among these districts, the district of Tusba and the students attending a primary school in this district were selected as the study group of the current study. In the table below, the data obtained from the Van National Education Directorate by VATSO for these five districts are given (VATSO, 2020).

Table 1. Information about the number of students, schools and classrooms in the five districts of the province of Van

District	Number of Students	Number of Schools	Number of Classrooms
İpekyolu	83.822	191	2.327
Erciş	47.445	225	1.880

Tuşba	42.264	163	1.615
Özalp	19.444	118	715
Çaldıran	18.835	119	674

Data Collection

In the current study, qualitative data were collected through metaphor. The data were obtained using a two-stage survey technique. The first stage consisted of a section with personal data prepared to determine the gender and grade level of the students. The second stage was consisted of a semi-structured interview form prepared by the researchers in a way that requires students to produce metaphors about the concept of life in the **COVID**-19 period and to give reasons. In this semi-structured interview form, there was the following phrase "The life in COVID-19 period is like ..... because ....." to be completed by the students.

Coding and Analysis of Data:

Coding of Data

The stages followed in the coding of the data in the study are as follows:

In the first stage, the data obtained in the study were counted. It was determined that a total of 485 students participated in the study. In the second stage, the data obtained in the study were separated according to the grade levels of the participants. In the third stage, the data which were separated according to grade levels were subjected to preliminary analysis. Forms that did not include a metaphor or did not state a reason for metaphor were excluded from the study. Thus, a total of 72 invalid forms were discarded from the study and 413 valid forms were obtained.

In the fourth stage, the data were reviewed by the researchers. At this stage, each grade level was handled separately. The connections between the metaphors created by the participants and the reasons for these metaphors were examined. The ones found to be unconnected were excluded from the study. Thus, a total of 85 invalid forms were removed from the study, and the total number of valid forms was determined to be 328.

In the fifth stage, forms that use only life-qualifying expressions (adjectives) instead of analogies were separated. In the preliminary analysis, it was noticed that 138 students participating in the study used repetitive qualifiers. For this reason, the relevant data were coded according to grade levels to be examined under a separate heading without being excluded from the study. These coded data are also discussed in the findings section. The data were entered into the Excel software program by following the order of grade level, gender, qualifier and explanation for this qualifier. Accordingly, the first letter of the word "Adjective" was used together with a number as "A1, A2, A3… A138" to represent each student and thus, the data were made ready for the analysis. Among the data coded according to grade levels, the range of "A1, A2…, A41" represents the second grade level, "A42, A43,…, A87" represents the third grade level and "A88, A89,…, A138" represents the fourth grade level.

In the sixth stage, 190 data containing metaphors were coded according to grade levels and then numbered. The data were entered into the Excel software program by following the order of grade level, gender, metaphor and explanation for the metaphor. Accordingly, the first letter of the word "Student" was used together with a number as "S1, S2, S3… S192" to represent each student and thus, the data were made ready for the analysis. Among the data coded according to grade levels, the range of "S1, S2…, S40" represents the second grade level, "S41, S42,…, S110" represents the third grade level and "S111, S112,…, S190" represents the fourth grade level.

Data Analysis

The content analysis technique was used in the current study. In content analysis, which provides the opportunity to work indirectly on the determination of human behaviour and nature (Büyüköztürk et. al., 2018, p.259), the units of measurement are focused on communication (such as the number of repetitions of a certain speech pattern or phrase) (Merriam, p.195). While analyzing the qualitative data, the students in the study group were coded as S1, S2, S3,..., S190 and the data obtained from the study group were analyzed by naming them with these numbers in the findings section.

Results:

The gender distribution of the students participating in the study according to their grade levels was analyzed with Crosstab in the SPSS22 program package.

Table 2. Crosstab showing the gender distribution of the students across the grade levels

Gender	**Grade Level**						**Total**	
	2nd		**3rd**		**4th**			
	f	%	f	%	f	%	f	%
Male	14	35	35	50	37	46.2	86	45.3
Female	26	65	35	50	43	53.8	104	54.7
Total	40	100	70	100	80	100	190	100

When the table regarding the distribution of the genders of the students participating in the study by grade level is examined, it is seen that 14 male and 26 female students at the second grade level participated in the study. While 35% of the second grade students participating in the study are males, 65% of them are females. At the third grade level, 35 male and 35 female students participated in the study. While 50% of the third grade students participating in the study are males, 50% of them are females. At the fourth grade level, 37 male and 43 female students participated in the study. While 46.2% of the fourth grade students participating in the study are males, 53.8% of them are females. A total of 86 male students participated in the study and they constitute 45.3% of all the participants. A total of 104 female students participated in the study**,** and they constitute 54.7% of all the participants. A total of 190 students participated in the current study.

Table 3. Metaphors developed by the students about the concept of "Life in the COVID-19 period"

No.	**Metaphor**	**f**	**%**	**No.**	**Metaphor**	**f**	**%**	**No.**	**Metaphor**	**f**	**%**
1.	Tree	1	0.53	**23.**	Home is enough	2	1.05	**45.**	Scissors	1	0.53
2.	Octopus	1	0.53	**24.**	Mouse hole	1	0.53	**46.**	Death	8	4.21
3.	Lion	1	0.53	**25.**	Disaster	1	0.53	**47.**	Close to death	1	0.53
4.	A dump	1	0.53	**26.**	Prison	70	36.84	**48.**	Longing	1	0.53

5.	A pit	1	0.53	**27.**	Patient	1	0.53	**49.**	Disgrace	1	0.53
6.	A bird's misery	1	0.53	**28.**	Disease	2	1.05	**50.**	Dream	1	0.53
7.	A virus	1	0.53	**29.**	Hospital	1	0.53	**51.**	Clock	1	0.53
8.	Emptiness	1	0.53	**30.**	A poisonous gas in the air	1	0.53	**52.**	Epidemic	1	0.53
9.	Monster	2	1.05	**31.**	Everywhere surrounded	1	0.53	**53.**	Ivy	1	0.53
10.	Hell	11	5.79	**32.**	Nothing	5	2.63	**54.**	War	1	0.53
11.	Punishment	1	0.53	**33.**	Non-running clock	1	0.53	**55.**	War time	1	0.53
12.	Despair	1	0.53	**34.**	Nightmare	6	3.16	**56.**	Unloving	1	0.53
13.	Flower	1	0.53	**35.**	Bird in the cage	2	1.05	**57.**	Exam	1	0.53
14.	A person suffering a lot	1	0.53	**36.**	Darkness	8	4.21	**58.**	Sugar	1	0.53
15.	Very dangerous	1	0.53	**37.**	A dark room	1	0.53	**59.**	Team play	1	0.53
16.	Flat	1	0.53	**38.**	Quarantine	1	0.53	**60.**	Danger	1	0.53
17.	Dinosaur	1	0.53	**39.**	Broken glass	2	1.05	**61.**	Technology	1	0.53
18.	Wall	1	0.53	**40.**	Restricted	1	0.53	**62.**	Poison	8	4.21
19.	World	1	0.53	**41.**	Lock	1	0.53	**63.**	Dungeon	6	3.16
20.	House	4	2.11	**42.**	Fear	1	0.53	**64.**	Zombie invasion	1	0.53
21.	House arrest	5	2.63	**43.**	Corona	1	0.53				
22.	Staying at home	1	0.53	**44.**	Bad time	1	0.53				
Total										190	100

As can be seen in Table 3, the students developed a total of 64 metaphors. Two of these metaphors were repeated by more than 10 students. In addition to these two metaphors, it was determined that there are seven different metaphors repeated five or more times. The remaining 55 metaphors were developed by either 4 students, 2 students or 1 student. When the frequency and percentage distributions of the most recurring metaphors are examined, it is seen that the most recurring metaphors are; Prison (f=70, 36.84%), Hell (f=11, 5.79%), House arrest (f=5, 2.63%), Nothing (f=5, 2.63%), Nightmare (f=6, 3.16%), Darkness (f=8, 4.21%), Death (f=8, 4.21%), Poison (f=8, 4.21%), Dungeon (f=6, 3.16%).

Categories and Codes from the Students' Views of the Concept of Life in the Covid-19 Period

When the metaphors developed by the students participating in the current study were analyzed, it was seen that these metaphors were gathered under certain categories. In the table below, there are categories related to metaphors and metaphors developed as codes:

Table 4. Categories and codes related to metaphors

Category	**Code**	**Total**
Being restricted	Octopus, a pit, a bird's misery, flat, wall, house, house arrest, staying at home, home is enough, mouse hole, prison, bird in the cage, quarantine, restricted, lock, dungeon	16
Disruption of order	A dump, punishment, flower, everything surrounded, non-running clock, broken glass, fear, bad time, scissors, clock	10
Feeling threatened	Tree, lion, a virus, monster, very dangerous, dinosaur, world, sick, disease, hospital, poisonous gas in the air, corona, epidemic, wartime, exam, sugar, danger, technology, team play, poison, zombie invasion	21
Despair	Emptiness, hell, despair, a person suffering a lot, disaster, nothing, nightmare, darkness, dark room, death, close to death, longing, disgrace, dream, ivy, war, unloving	17
Total		64

Table 5. Distribution of the categories and codes related to metaphors across the grade levels

Grade Level	**Category**	**Code**
2nd Grade	Being restricted	House (2), house arrest (1), home is enough (1), prison (18), bird in the cage (1), lock (1)
	Disruption of order	Punishment (1), fear (1), clock (1)
	Feeling threatened	Sugar (1), team play (1), danger (1), poison (1)
	Despair	Hell (6), despair (1), nothing (1), unloving (1)
	Total	40
3rd Grade	Being restricted	Flat (1), house (1), house arrest (4), staying at home (1), home is enough (1), prison (24), dungeon (3)
	Disruption of order	Bad time (1), scissors (1)

	Feeling threatened	A virus (1), monster (2), very dangerous (1), dinosaur (1), sick (1), disease (2), a poisonous gas in the air (1), corona (1), wartime (1), exam (1), poison (3)
	Despair	Hell (1), disaster (1), nightmare (4), darkness (7), a dark room (1), death (3), dream (1)
	Total	70
4th Grade	Being restricted	Octopus (1), house (1), a pit (1), a bird's misery (1), wall (1), mouse hole (1), prison (28), bird in the cage (1), quarantine (1), dungeon (3)
	Disruption of order	A dump (1), flower (1), everything surrounded (1), non-running clock (1), broken glass (2), restricted (1)
	Feeling threatened	Tree (1), lion (1), world (1), hospital (1), epidemic (1), technology (1), poison (4), zombie invasion (1)
	Despair	Emptiness (1), hell (4), a person suffering a lot (1), nothing (4), nightmare (2), darkness (1), death (5), close to death (1), longing (1), disgrace (1), ivy (1), war (1)
	Total	80
General	**Total**	190

When Table 5 was analyzed according to categories, the following findings were obtained:

The Category of Being Restricted

Sixteen different metaphors are gathered under the *Category of Being Restricted*. When this category was examined according to grade level, the following findings were obtained:

At the second grade level, *prison (18)* is the most frequently developed metaphor. The metaphor of *house (2)* was also developed by more than one person. At the third grade level, the metaphors of *prison (24), house arrest (4),* and *dungeon (3)* were the ones most repeated. At the fourth grade level, the metaphors of *prison (28)* and *dungeon (3)* were developed by more than one person.

At the fourth grade level, the metaphors of *prison (28)* and *dungeon (3)* were developed by more than one person within the category of "*being restricted*". It is seen that the dungeon metaphor was developed in the same number at the third and fourth grade levels. Below are some of the metaphors and metaphor explanations developed by the students within the scope of the category of "*being restricted*":

*"Life is like a prison in the time of COVID-19 because I never made contact (S17), life is like a prison in the time of COVID-19 **b**ecause there are bans, life is like a prison (S76), life is like a prison in the time of COVID-19 **b**ecause we lose our loved ones. We can't go to school, we can't go anywhere (S153), life is like a dungeon in the time of COVID-19 **b**ecause our life is restricted (S109), life is like a dungeon in the time of COVID-19 **b**ecause it caused us to stay at home and not to go out (S189)".*

The Category of Disruption of Order

When the ten metaphors collected under the category of "*disruption of order*" were analyzed according to grade levels, only the metaphor of *broken glass (2)* was developed by more than one person in this category at the fourth grade level. It was determined that the remaining nine metaphors were developed by only one person at each grade level. Some of the metaphors and metaphor explanations they developed within the context of the "*disruption of order*" category are

given below:

"In the time of COVID-19, life is like broken glass because we're stuck at home, our schools are closed, our hearts are broken (S169); life is like a punishment in the time of COVID-19 b ecause we can't go anywhere. We can't go to school (S8), life is like scissors in the time of COVID-19 because it's tearing us apart (S98)'.

The Category of Feeling Threatened

21 different metaphors were collected under the category of "*Feeling Threatened*". When examined according to grade levels, poison metaphor was seen to be developed at each grade level. This metaphor was developed by one student at the second grade level, three students at the third grade level and four students at the fourth grade level. *Monster (2)* and *disease (2)* are other metaphors developed by more than one student at the third grade level. Other than these three metaphors, 18 metaphors were developed only once at each grade level.

Some of the metaphors and metaphor explanations they developed within the scope of the "*Feeling Threatened*" category are given below:

Life is like poison in the time of COVID-19 because people got sick. Many people died (S40), life is like poison in the time of COVID-19. Because we can't enjoy anything (S105), life is like poison in the time of COVID-19. Because just like a snake having poison, it bites us and kills us, just like the snake, the corona infects us and kills us (S186), life is like a monster in the time of COVID-19. Because everyone gets corona and life gets harder (S42), life is like a dinosaur in the time of COVID-19. Because our life was taken (S47), life is like a zombie invasion in the time of COVID-19. Because everybody's infecting each other (S190)'.

The Category of Despair

When the 17 metaphors gathered under the despair category were analyzed according to grade levels, the following findings were obtained:

The hell metaphor was developed at each grade level.This metaphor was developed by six students at the second grade level, one at the third grade level and four students at the fourth grade level. The metaphors repeated at the third and fourth grade levels are the *nightmare* and *death* metaphors. The nightmare metaphor was developed by four third-grade students and two fourth-grade students. The death metaphor was developed by three third-grade students and five fourth-grade students. The metaphor of *darkness (7)* and the metaphor of *nothing (4)* are other metaphors developed more than once. Other than these metaphors, 12 metaphors were developed by a student at different grade levels.

Some of the metaphors and metaphor explanations they developed within the scope of the category of "*Despair*" are given below:

"Life is like hell in the time of COVID-19. Because it brings death (S2), life is like hell in the time of COVID-19. Because you can't go to school every day and you can't go to your loved ones (S44), life is like hell in the time of COVID-19. Because some of the people die because of the covid, some are stuck at home (S121). Because we couldn't go out and play, the house is like a prison (S91). Because people were passing out and dying outside (S164), in the time of COVID-19, life is like death. Because the more corona virus kills people, the more powerful it gets (S173), life is like nothing in the time of COVID-19. Because things couldn't be done, people were dying (S158)"

The distribution of the genders of the students who explain their perception of life with qualifiers without using metaphors according to their grade levels is given in the table below:

Table 6. The distribution of the genders of the students across the grade levels

Gender	Grade Level						Total		
	2nd		3rd		4th				
	f	%	f	%	f	%	f	%	
Male	17	41 .5	23	50	27	52 .9	67	48	.6
Female	24	58 .5	23	50	24	47 .1	71	51	.4
Total	41	100	46	100	51	100	138	100	

When the table regarding the distribution of the genders of the students who explain their perception of life with qualifiers without using metaphors according to grade level is examined, there are 17 male and 24 female students at the second grade level. Male students constitute 41.5% of the participants at the second grade level, and female students constitute 58.5% of them. At the third grade level, 23 male and 23 female students explained life with qualifiers without using metaphors. At the third grade level, male students make up 50% of the participants, and female students make up 50%. There are 27 boys and 24 girls at the fourth grade level. At the fourth grade level, male students constitute 52.9% of the participants, and female students make up 47.1%. There are 67 male students in this part of the study and they constitute 48.6% of the participants. Seventy-one female students participating in the research constitute 51.4% of the participants. A total of 138 students participated in the current study.

Table 7. Qualifiers used by the students regarding the concept of life in the COVID-19 period

No.	Qualifier	f	%	No.	Qualifier	f	%
1.	Stagnant	3	2,17	6.	Terrible	4	2,90
2.	Beautiful	4	2,90	7.	Bad	75	54,35
3.	Disgusting	2	1,45	8.	Boring	27	19,57
4.	Good	2	1,45	9.	Difficult	20	14,49
5.	Easy	1	0,72				
Total						138	100

When the table was examined, it was determined that the students explained life in the COVID-19 period using nine different qualifiers. Among these qualifiers, eight qualifiers other than easy (1) were used by more than one student. The majority of the students described life as *bad* (f=70, 54.35%), *boring* (f=27, 19.57%) and *difficult* (f=20, 14.49%). As can be seen in the table above, few students described life as *beautiful* (f=4, 2.9%), *good* (f=2, 1.45%) and *easy* (f=1, 0.72%).

Table 8. Categories and codes related to qualifiers

Category	Code	Total
Positive qualifiers	Beautiful, good, easy	3
Negative qualifiers	Stagnant, disgusting, terrible, bad, boring, difficult	6
Total		9

Table 9. Distribution of codes and categories of qualifiers across the grade levels

Grade Level	Category	Code
2nd Grade	Positive qualifiers	Good (1).
	Negative qualifiers	Stagnant (2), terrible (1), bad (18), boring (12), difficult (7).
	Total	41
3rd Grade	Positive qualifiers	Beautiful (4), good (1), easy (1).
	Negative qualifiers	Stagnant (1), bad (24), boring (8), difficult (7).
	Total	46
4th Grade	Positive qualifiers	-
	Negative qualifiers	Disgusting (2), terrible (3), bad (33), boring (7), difficult (6).
	Total	51
General	**Total**	138

In the "positive qualifiers" category, one student at the second grade level used the qualifier of "good". The qualifier "beautiful" was written by four students at the third grade level, and the remaining qualifiers**,** "good" and "easy"**,** were used by one student each. There are no students who used positive qualifiers at the fourth grade level.

Below are some of the statements of the students using positive qualifiers:

"Life feels like good in the time of COVID-19. Because we don't come together (A3), life feels like beautiful in the time of COVID-19. Because I'm doing my homework at home, reading books, solving questions (A43), life feels like good in the time of COVID-19 because I bought toys, played at home, read books (A 47)".

When the category of "*negative qualifiers*" was examined, the qualifier "bad" was determined to be used by 18 students, followed by the qualifiers of "boring" and "difficult". Twelve students used the qualifier "boring" and 7 students used the qualifier "difficult". Two students described life as stagnant and one student described it as terrible. The qualifier "bad" used by 24 students at the third grade level was determined to be the most used qualifier. The qualifier "boring" was used by eight students, making it the second most repetitive qualifier. The qualifier "difficult" was used by seven students and thus became the third most used qualifier. Apart from these qualifiers, one student described his/her life as stagnant. At the fourth grade level, the qualifier "bad" ranked first as it was used by 33 students, the qualifier "boring" was used by seven students and thus became the second most used qualifier**,** and the qualifier "difficult" was used by six students and thus ranked the third. Apart from these qualifiers, three students described life as terrible and two students described it as "disgusting".

When the category of "positive qualifiers" is examined in general, students at all three grade levels described life as bad, boring and difficult. The order of these three qualifiers is the same at each grade level.

Below are some of the statements of the students who used negative qualifiers:

*'Life feels like bad in the time of COVID-19. Because we always have online lessons I hate corona (A5), life feels like bad in the time of COVID-19. Because corona caused an increase in the number of patients (**A52**), life feels like bad in the time of COVID-19. Because mom and dad are worried (A114), life feels like boring in the time of COVID-19. Because we can't go outside (A24),*

life feels like boring in the time of COVID-19 b ecause we always stay at home. We want to go out and play. We want to breathe. That's why it's boring (A80), life feels like boring in the time of COVID-19. Because corona has spoiled our lives and forced us to stay at home and hurt us (A132), life feels like difficult in the time of COVID-19. Because it's difficult to live in corona (A41), life feels like difficult in the time of COVID-19. Because we can't see friends often, there are bans (A82), life feels like difficult in the time of COVID-19. Because the epidemic has distressed us all (A136), life feels like disgusting in the time of COVID-19. Because schools could not be opened, bans started (A88), life feels like stagnant in the time of COVID-19 b ecause the corona virus affects people, social life badly (A42)'.

Discussion:

It was determined that 190 primary school students who participated in the current study developed a total of 64 different metaphors. Vosniadou (1987) states that children produce metaphor-like expressions as soon as they start to speak, and they can understand simple metaphorical expressions until the age of four. He also emphasizes that metaphors make it easier for children to use their existing knowledge to make sense of phenomena they have not experienced before, as well as to classify similarities between objects and events in their environment. The fact that the students participating in the current study used situations they had not experienced before (prison, dungeon, hell, etc.) as a metaphor shows that they can make a connection between their current knowledge and the situations they have not experienced.

In the current study, metaphors were grouped under the categories of "*Being Restricted*", "*Disruption of Order*", "*Feeling Threatened*" and "*Despair*" for each grade level. This may help explain what remains unclear as to whether school closures have worked well enough to warrant the expected negative consequences for children in terms of the epidemic and education (Kickbusch, Leung, & Shattock, 2021). Researchers can try to assess the impact of COVID-19 on other vulnerable populations such as children, those from low socioeconomic classes, etc. (Rajkumar, 2020).

It was observed that the students who explained their perceptions of life through qualifiers mostly used negative qualifiers. As negative emotions increase, people may rely more on negative information about COVID-19 than other information to make decisions (Van Bavel et al., 2020). It is believed that negative thoughts developed by children may cause them to be more prone to adopt negative information. This situation can affect not only the education of children, but also their entire future life.

Conclusion:

In the current study, it is seen that the primary school students can explain life through metaphors during the period of epidemic. Students participating in the research developed a total of 64 different metaphors, two of which (prison, hell) were repeated by more than 10 students. In addition to these two metaphors, it was determined that there were seven different metaphors (house arrest, nothing, nightmare, darkness, death, poison, dungeon) repeated five or more times. When the metaphors developed by the students participating in the current study were analyzed, it was seen that these metaphors were gathered under four certain categories. These categories are defined as Being restricted, Disruption of order, Feeling threatened, and Despair. When the qualifiers used by the students to explain life in the COVID-19 period were examined, it was seen that there were two types of qualifiers: positive qualifiers and negative qualifiers. The majority of the students, including the students who used qualifiers instead of metaphors, see the epidemic as

a negative and bad situation that limits and disrupts them. Students who were left alone with this situation felt helpless and under threat. The categories in which the metaphors were collected in the current study enable us to see this picture more clearly. For students who are away from social interaction and school, and who have never had the opportunity to go to school, issues related to education and real life should be investigated more, and solutions to improve the current situation should be offered.

Recommendations:

In addition to their physical health, researchers should focus on children's perceptions, attitudes towards life and behavioural changes during the COVID-19 period, which has a worldwide impact. In order for children to get through this period with the least damage both physically and mentally, studies can be carried out especially for disadvantaged groups. In addition to this study, in which students' perceptions of life are examined through metaphors, concepts such as school, teacher, and education can also be examined from students' perspectives.

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Using Duolingo to Improve Beninese Secretarial Advanced Learners' Oral Communication Skills

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Doi:10.19044/ejes.v9no1a25 URL:http://dx.doi.org/10.19044/ejes.v9no1a25

Submitted: 20 November 2021
Accepted: 28 February 2022
Published: 31 March 2022

Abstract

This paper focuses on examining the use of the Duolingo App as a supplement to the traditional ESP courses in Secretarial Studies, for Advanced ESP learners Classes of Lycée Technique et Professional de Porto Novo (LTP-PN), in the Benin Republic. The Objective is to assess substantial improvement of Learners Oral Communication skills after 3 months of studious use of mobile language learning apps. An experimental mixed-method research design in two stages have been used. During the first stage, quantitative data was collected using questionnaires administered to Ten (10) ESP teachers and Forty (40) randomly selected ESP secretarial studies learners of LTP-PN. Qualitative data was also gathered during classroom observations. In the second stage, the experimentation process involving the Experimental Groups (EG), which received the treatment, that is "*the use of Duolingo for 15 Mn"*, and the Control Group (CG) were tested. The data was collected and computed using one way ANOVA test in SPSS 26. The result shows a statistical significance between the use of Duolingo and Secretarial Studies ESP learners' oral proficiency improvement. This paper further suggested that mobile learning apps such as Duolingo should be used as a supplement to the traditional ESP courses. It also pointed out the necessity for ESP teachers to invest in their professional development rather than waiting for the government.

Keywords: **Secretarial Studies learners, Duolingo, Oral Communication, ESP**

Introduction

Today's English for Specific Purpose teaching-learning must be competency-based and should integrate digital literacy. There is need for ESP language learning to promote autonomous learning in order to access the limitless resource available online via computers or mobile devices so as to supplement the traditional curriculum. The objective is to overcome the impediments of the traditional teaching-learning process in foreign language contexts. The main problem of the ESP teaching-learning process in Benin is the poor language exposure and the seeming irrelevance of English in learners' daily communication needs especially out of the classroom settings. The direct consequence is that English language has gradually been restricted to a mere classroom subject and its success is guaranteed by assignment completion and grammar items memorisation.

The problem is that most teachers still stick to the traditional grammar-translation method

despite the two decades of the implementation of the Competency-Based Approach that has theoretically been set out for communicative competence development. This results in ineffective teaching-learning processes and highlights the mediocre performance of Beninese ESP learners, especially for secretary studies field in Lycée Technique et Professionnel de Porto Novo. These students are trained to be skilled secretaries and assistants and a sound communicative skills development is needed for them to be effective bilingual professionals.

In the context of the COVID-19 pandemic, with the protective measures and the development of distance learning, it is vital to create an effective yet attractive continuum that sustainably draws learners' attention and interest to an autonomous self-regulated and low anxiety learning process out of the classroom settings. This continuum, set by ESP teachers whose responsibility is to raise learners' awareness of the necessity to practise the language out of the classroom settings, can be created by language learning apps. One of the most effective apps available from the wide range of the increasing number of foreign language learning apps available on google Android and Apple's IOS is Duolingo. Duolingo uses adaptive learning technologies, which can tailor the tasks to the level of each student. The students use the app online, either in its mobile version or in their web browser. Therefore, this app takes advantage of today's learners' interest in digital media and content. This can consistently increase language exposure and offer real possibilities to improve their communicative competence.

Consequently, this paper assesses the impact of using Duolingo to complement traditional teaching-learning courses on LTP-PN secretarial ESP learners' Oral communication skills development in the COVID-19 pandemic context. The objective is to see whether Duolingo can be used efficiently by students out of the classroom settings, according to their level and needs, to improve and expand what is covered in class. To reach this goal, the following questions have guided this paper:

1. What are the challenges of ESP secretary learner oral proficiency development in LTP-PN in today's education context?
2. Is there any statistical significance between the use of Duolingo and Secretarial Studies ESP learners' oral proficiency improvement?
3. How can Duolingo be efficiently used in the Beninese ESP teaching to supplement traditional courses in order to promote self-directed learning that consistently improves learners' oral communication?

Theoretical Keystones

This section explores a review of literature that specifically hinges on the concept of the definition of mobile learning, the definition of Duolingo, and the applicability of the use of Duolingo in the education field.

Mobile Language Learning

According to Ramírez (2009), mobile learning (M-learning) is the direct offspring of e-learning, which involves any learning supported by electronic devices and resources. M-learning provides students with flexible learning that can augment the classroom experience. M-learning is a process that enables learners to collaborate with their peers and instructors to build knowledge. According to Crompton (2013, p.4), M-learning involves "learning across multiple contexts, such as social and content interactions, by using personal electronic devices".

Duolingo application is available for smartphones or a tablet. Through exercises, divided into skills and lessons, Duolingo teaches grammar and vocabulary which assists learners to get to

an A2 level by having them complete all the required purposely designed tasks. Duolingo also uses spaced repetition, in which its artificial intelligence algorithm detects rehearsal needs. Cavus and Ibrahim (2009) showed that most students that use the app enjoyed it and can learn new words. Duolingo's activities integrate several items and skills including pronunciation, translation, and activities such as matching words and pictures, listening and writing, etc.

These three elements namely, integrated language skills, spaced-out practice, and variety significantly improves communication (Brown, Roediger & McDaniel, 2014, p.46). Duolingo provides instant feedback essential for autonomous learning after each task. Autonomous learning is a *"learning process in which the conceptualization, design, conduct, and evaluation of a learning project are directed by the learner"* (Brookfield, 2009, p.2615). This study, thus, suggests that Duolingo should be used as a complement to augment more classical types of homework rather than substituting the ESP class itself.

Duolingo: Definition of the App

Duolingo is a free app created by Luis Von Ahn and Severin Hacker in November 2011. Its slogan is "Free language education for the world." According to its website, it has more than 30 million registered users. It offers several languages for both English speakers and for non-English speakers.

Different types of activities can be performed by students to develop several skills on Duolingo. Once a skill is selected, the available number of lessons for that particular skill is presented. Each lesson lists up to eight words that will be reviewed. Within the app, completing lessons and being tested for all the lessons related to the selected skills is called "practice" or "strengthening skills". This is done to differentiate it from regular lessons. In the app options, general practice can be chosen to review areas that the program considers have not been practised, rather than just a specific skill. Practicing a particular skill can be done once all the lessons have been completed. In each lesson, there is a symbol that indicates the "strength" of the corresponding skill with a maximum "grade" of 5. At five, the symbol of the skill becomes gold.

Below is a list of the most common activities in each lesson (it may not be comprehensive, since the app is constantly being modified):

- Write a vocabulary word after seeing a picture that represents it.
- Translate a sentence into your native language
- Translate a sentence into the target language.
- Dictation: write a sentence that you hear at normal or slow speeds so as to hear the sentence conveniently.
- Pronouncing a sentence. the app uses a voice recognition algorithm to detect whether your pronunciation is correct.
- Match pairs of words.
- Put scrambled words in order.
- Choose from three sentences in the target language to see which ones fit the most in the native language.

Activities are presented in sequence, and the lesson "extends" itself if you get wrong answers. This is indicated by the strength bar at the top of the lesson. If there are no mistakes, it takes seventeen short activities like the ones described above to complete a lesson. This generally takes between five to ten minutes. This time may vary, however, since new activities are added if you make mistakes.

Duolingo incorporates some gamification elements to motivate and engage learners. Some

examples of this are the lingots which are given as awards when you complete a skill. Also, a weekly leader board is included where you can "compete" against friends to see who has the highest XP, which is a symbol of a flame next to your name with the numbers of days of your streak on the site. The aforementioned strength bar appears when a user is completing a lesson, and this indicate how close they are to finishing it. Although the exercises are quite traditional, these elements make the app more enjoyable,.

Gamification and Language Teaching-learning

Today's education suggests an adaptation to the needs of educated children. From the earlier age in kindergarten to any effective learning contexts, gamification is a factor that enables the free expression of innate talents that shape personality. People learn better when they enjoy the learning process. Like any other adult activity, the ludic process needs to be a well-thought activity, which is necessary and mandatory in the process of education.

Cretu (1999) states that the ludic process contributes to the building of child personality by developing the creative capacity as well as the capacity to progressively solve distinct situations. By solving contradictory situations, the ludic process creates the framework of the real world for effort and throwing aside obstacles. Thus, this contributes to the development of ludic morality and shapes what Piaget (2012) calls *"the cathartic functions".* Hence, the ludic process actively participates in both the genesis of the socio-humane behaviour and in the learning of discipline elements in the context of behavioural expression of the preschoolers and pupils.

Importance of Duolingo in the Beninese Secretarial Studies

Beninese secretarial students hardly speak English. The use of the language in the classroom is restricted to note-taking and the memorization of grammar items and business English course definitions is for the purpose of sitting for written exams. Out of the classrooms in their daily lives, there are barely effective opportunities to use English for communication. Normally, these learners need to be trained in learning situations that reflect the workplace challenges and all that it implies. Since they are meant to interact with people from both French and English-speaking countries, bilingualism is a prime requirement to be integrated with secretarial course design and ESP teachers need to be trained accordingly. Sadly, the current Beninese teaching-learning has disheartened secretarial ESP learners from perceiving and using English as a workplace communication prerequisite.

The ludic aspect of Duolingo prevents seeing learning from a burdensome view and ensures that learning is easier and faster by applying the mastered skills into practical aspects of their future professional life. This process represents a continuum between the classical school and the modern world of a digital generation that increases by daily interaction with digital technologies.

Method

This research paper has been carried out using a mixed-method type of research in two (2) stages. The first step involves data collection from both qualitative and qualitative sources using questionnaires addressed to ESP teachers and learners. The second stage is a quasi-experimental process designed to assess the statistically significant impact of Duolingo on ESP Advanced Secretarial learners' Oral performance. Throughout this section, the target population, the sampling, the instruments, the data collection procedures, and the method of analysis are developed.

Target Population and Sampling

Ten (10) ESP teachers, teaching in LTP-PN, who experienced language learning apps and language labs during the COVID-19 period were purposely sampled to fill in the questionnaire. Forty (40) randomly selected ESP secretarial studies learners, experiencing the challenges related to the current ESP teaching-learning process in LTP-PN, were also investigated. These teachers and learners were able to provide reliable data.

For the experimentation process of data collection, two categories of students were purposely selected. Twenty (20) LTP-PN Secretarial studies ESP learners were randomly selected and received the treatment, that is *"the use of Duolingo for 15 Mn*", in the first category. They actively corresponded to *"intensive training*" while using Duolingo every day for the three (3) months of the experiment. This category of students served as the Experimental Group (EG). The second group of twenty (20) ESP learners, that is the Control Group (CG), only attended traditional English classes and did not receive any treatment. Both groups have been studying English for at least five (5) years with three (3) hours of English per week.

Research Instruments

The research instruments consist of questionnaires and experimentation.

Questionnaires for Teachers and Learners

Questionnaires were administered to ESP teachers and learners.

- Six (6) questions were addressed to teachers about the use of mobile/computer-assisted language learning apps to improve students' speaking fluency and accuracy.
- Five (5) questions were addressed to learners about their perception and challenges related to the English language learning, especially during the COVID-19 pandemic.

The Experimentation

This instrument statistically assesses the impact of regular use of "Duolingo" as a supplement to traditional English courses for three (3) months on LTC-PN secretarial studies ESP learners' oral communication. For this purpose, the simplified speaking skills assessment grid described in Table 1 below has been used for pre-test and post-test after the treatment. Both EG and CG have been tested and the data collected have been analysed using SPSS 26, which shows the mean, the analysis of variance (one-way ANOVA), and the measure of association.

Student ID:_____ Pre-test □ Post-test □

Table 1. Pre- test and Post-test Oral communication Evaluation Rubric

Rubrics	**Criteria**	**Points**	**Total**
Fluency	a. The speaker speaks confidently and naturally with no distracting hesitations. Ideas flow smoothly.	4	
	b. The speaker hesitates several times but generally seems to know the desired words, even if it is necessary to think about them a bit.	2	
	c. The speaker has many hesitations and great difficulty remembering or selecting words.	1	

Pronunciation	a. Pronunciation is accurate with correct inflexions, numbers of syllables, and other correct nuances of pronunciation.	4	
	b. Pronunciation is satisfactory. However, words sometimes have incorrect inflexions or are otherwise sometimes hard to understand.	2	
	c. Pronunciation is very hard or impossible to understand by a native speaker.	1	
Grammar	a. The speaker speaks with no more incorrect grammar than a native speaker would.	4	
	b. The speaker occasionally uses inappropriate verb tenses and/or incorrectly uses parts of speech. However, the speaker can correct grammar without prompts.	2	
	c. The speaker makes frequent use of inappropriate verb tenses and/or incorrectly constructs sentences or uses parts of speech.	1	
Vocabulary	a. Vocabulary is sufficient to be understood in most settings and words are used with their correct meaning.	4	
	b. Vocabulary is moderate, although the speaker sometimes needs help identifying the correct words. There are only occasional problems with the correct meanings of words.	2	
	c. Vocabulary is very limited and/or incorrect words are often used.	1	
Content	a. The speaker is knowledgeable about the subject and provides a significant level of details, given the time available.	4	
	b. The speaker is aware of the subject and attempts to provide relevant ideas about it by providing some details.	2	
	c. Speaker seems to have little or no understanding of the subject. Statements are superficial or not relevant.	1	
Total			20

Source: Adapted from Marek, M. W., & Wu, W. (2011)

Hypothesis and Variables

At this stage, the main hypothesis states that *'using Duolingo improves oral communication'*. Hence, it involves two variables: the dependant variable is measurable and cannot be manipulated by the researcher while the independent variable can be manipulated by the researcher to have a direct effect on the dependant variable. Here, the independent variable involves the *use of Duolingo* while the dependent variable requires *learners' oral performance*.

To validate the main hypothesis, a null hypothesis and an alternative hypothesis have been formulated. The objective is to reject this null hypothesis using the analysis of variance ANOVA test for statistical significance. Two values are expected and a *p-value* of $\alpha < 0.05$ indicates *Statistical Significance* while the *ETA Squared* value expresses the *Measure of Association*. Thus, the effect size between the independent variable (the treatment) and the dependent variable (learner performance/score) can be assessed. The ETA square also measures the real-life impact of using

Duolingo. The data is analysed using SPSS 26 with the following conditions:

A *Null hypothesis* (H_o) and an *Alternative hypothesis* (H_A)ˉare formulated. These two hypotheses help to validate the main hypothesis:

1. H_o: There is no statistical significance between the *Use of Duolingo* and Learners' *Oral Communication skills development*.
2. H_A: There is a statistical significance between the *Use of Duolingo* and ESP learners' *Oral Communication skills development.*
3. H_A is Validated if H_o is rejected. Therefore, the main hypothesis is also validated.

Notion of Significance

The statistical significance and the practical significance have been assessed for the current experimentation. The Statistical significance (Sig) is established for a p-value noted $\alpha<0.05$. The level of statistical significance is expressed as a p-value between 0 and 1. A *p*-value ≤ 0.05 is statistically significant. It indicates strong evidence against the null hypothesis since there is less than a 5% probability for the null hypothesis to be validated. The practical significance or the real-life significance which expresses the strength of the correlation between the independent variable and the dependent variable is assessed through the *Effect size* expressed in ETA squared value.

Procedures of Data Collection and Methods of Data Analysis

Data was collected from ESP teachers and learners. Ten (10) ESP teachers were interviewed at their weekly pedagogical workshop and they were asked to fill in the questionnaire on the spot as well. This enabled the researcher to collect 100% of the questionnaires. Data obtained from the target population was analysed and processed using Microsoft Excel 2019. The results were presented in figures (charts).

Results and Discussion

Report from Questionnaires

Secretarial ESP Learners' Difficulties

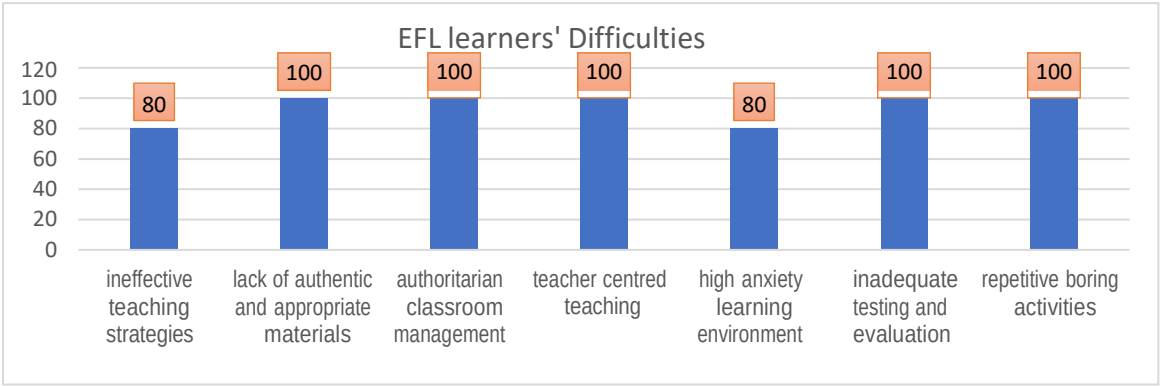

Figure 1. Secretarial ESP learners' Difficulties

In Figure 1, the respondents unanimously deprecate the lack of authentic and appropriate materials, the authoritarian classroom management style in teacher-centred teaching, the inadequate testing and evaluation system, and the repetitive boring class activities. For 80% of the

sample, these impediments and the ineffective teaching strategies generate high anxiety which impedes a communicative learning environment.

Beninese ESP Teachers Difficulties

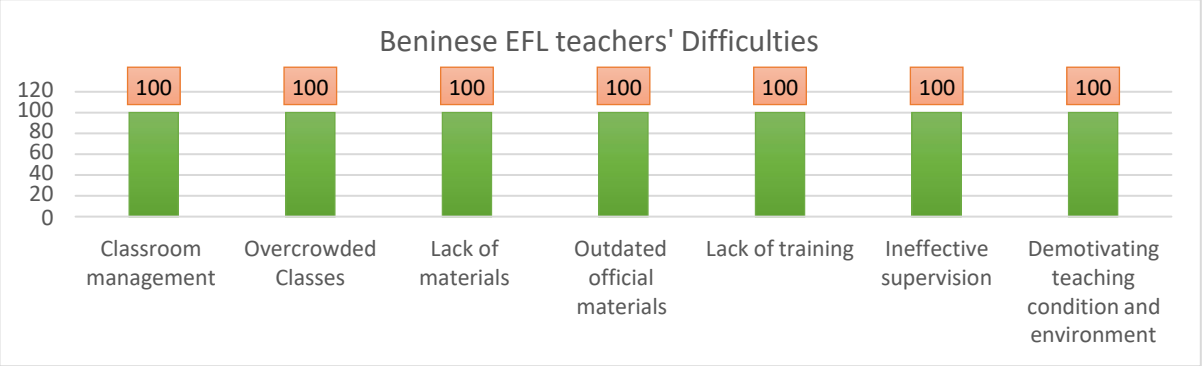

Figure 2. Beninese ESP teachers Difficulties

In Figure 2, all the investigated teachers deprecate overcrowded classes, the lack of teaching materials, the outdated official materials, the lack of training, the ineffective supervision leading to classroom management challenges, and the demotivating teaching condition and environment.

Advantages of Duolingo in ESP Context

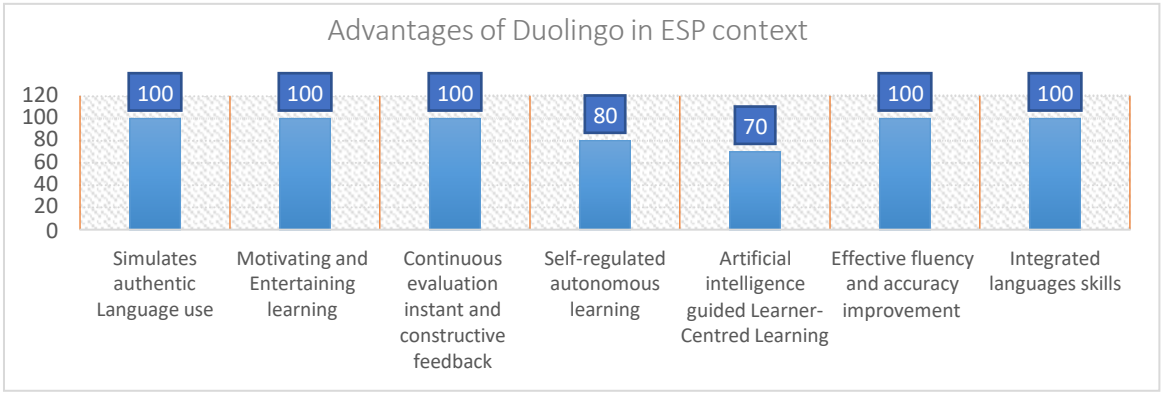

Figure 3. Advantages of Duolingo in ESP Context

Interestingly, for all the respondents in Figure 3, Duolingo simulates authentic language use through motivating and entertaining learning. It also provides continuous evaluation and constructive instant feedback. This allows self-regulated autonomous learning (80%). Furthermore, the respondent consistently acknowledged an effective fluency and accuracy improvement using the app. This is possible because the content of Duolingo uses integrated languages skills development approach with an artificial intelligence guided Learner-Centred Learning (70%).

Drawbacks of Duolingo in Beninese ESP Context

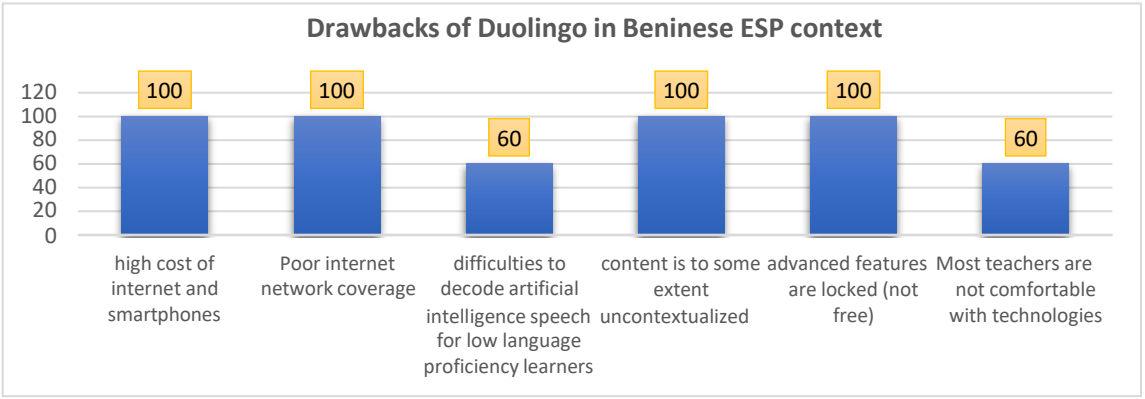

Figure 4. Drawbacks of Duolingo in Beninese ESP Context

Unanimously, in Figure 4, the respondent teachers identify the high cost of internet and good smartphones, as well as the poor internet network coverage to be the main hurdles. More specifically, like most ai-based mobile language learning apps, there are real difficulties to decode artificial intelligence speech for low language proficiency learners in the ESP context (60%) and the content of Duolingo is to some extent uncontextualized (100%). Also, Duolingo is not 100% free because the advanced features are unlocked for the paid version only. Nevertheless, the main barrier to the integration of mobile app as a supplement to the traditional ESP curriculum is that most teachers (60%) are not comfortable with technologies.

The Result of the Experimentation

The experimental group received the treatment that consisted of using Duolingo as a supplement to traditional teaching and the Control Group received no treatment. This analysis is based on the students' scores representing their average in oral communication performance. The data is analysed using SPSS 25 for pre-test and post-test for both groups to assess any significant improvement in oral communication performance that is correlated to the use of Duolingo. The test results are displayed in the following tables:

Oral Communication Pre-test

Table 2. Oral communication Pre-test Report

Report			
Overall Score			
Group	Mean	N	Std. Deviation
Experimental	10.30	20	1.922
Control	10.65	20	2.207
Total	10.48	40	2.050

Table 2 shows that by comparing the mean of both groups, their performances are almost 10.10≈*10.05*. This presages that there is no statistically significant difference between group performance before the treatment.

Table 3. ANOVA Table Oral communication Pre-test Report

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Overall Score * Group	Between Groups	(Combined)	1.225	1	1.225	.286	.596
	Within Groups		162.750	38	4.283		
	Total		163.975	39			

Table 3 details p-value = 226 > 0.05. This shows that there is no statistical difference between groups before the treatment.

Oral Communication Post-test

Table 4. Oral Communication Post-test Report

Report			
Overall Score			
Group	Mean	N	Std. Deviation
Experimental	13.75	20	1.860
Control	11.05	20	2.188
Total	12.40	40	2.426

The experimentation from Table 4 reveals the mean of EG as 13.75 with a standard deviation of 1.860, while CG has a mean of 11.05 with a standard deviation of 2.188. This shows a consistent difference in performance between both groups for the post-test.

Table 5. ANOVA Table Oral Communication Post-test

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Overall Score * Group	Between Groups	(Combined)	72.900	1	72.900	17.678	.000
	Within Groups		156.700	38	4.124		
	Total		229.600	39			

In Table 5, the analysis of variance ANOVA shows that there is a statistical significance between both groups as *Sig =.000* for a p-value noted p=.000153 < α=0.05 (the significance level). This value thus rejects the Null Hypothesis asserting that no differences (related to the treatment) exist between groups. Consequently, the alternate hypothesis H_A is validated: there is a statistical significance between groups performance related to the treatment.

The practical level of correlation/association between treatment and groups is assessed by the measure of association summarized in Table 6.

*Table 6. Measure of Association Oral Communication of Overall Score * Group*

Measures of Association

	Eta	Eta Squared

Overall Score * Group		.563	.318

The measure of association in Table 6 reveals that the Eta squared value expressing the Effect size is ES= .318. This indicates a strong correlation between the dependent variable (learners overall score) and the independent variable (use of Duolingo). Therefore, 31.8% of the improvement of learners' performance can be attributed to the impact of the use of Duolingo.

Discussion

The Challenges of Beninese ESP Teaching-Learning in Today's Education Context

During this investigation, 80% of the Secretarial studies learners denounce the ineffective teaching strategies while all of them deprecate the lack of authentic and appropriate materials. They also complain about the authoritarian classroom management style and the fact that learning is still teacher-centred method despite the implementation of the CBA which is supposed to implement a learner-centred approach. Beninese teachers hardly create conducive classrooms. The education system and teacher training do not empower the teacher to match today's education requirements. Most teachers rely on their own and use the available official yet outdated documents to get their job done and avoid any blame for the supervisory staff.

The problem with the educational system is the inconsistent implementation of current teaching-learning approach due to the lack of effective support in terms of facilities requirement, teacher training, and material production. More so, after more than two (2) decades of the implementation of official documents for students' book, teachers' guides and programmes have neither been improved nor updated. This results in boring irrelevant class activities and ineffective teaching strategies.

The main hurdle in the Secretarial field is the evaluation system that negatively impacts both teachers and learners' performance. Essentially, the performance of ESP teachers is measured through the curriculum coverage, the availability of the lesson plan sheet (not its smart execution), the formal implementation of the CBA teaching strategies (group work, collective work, pair work and individual work), the use of the board, etc. Patently, only the superficial aspect of the teaching-learning process is assessed. Learners on the other hand are assessed through written evaluations during formative and summative assessments. Their oral communication competence is not effectually taken into account. Hence, learners attend English Classes to get good marks and pass exams. This is why they justifiably complain about the inadequate testing and evaluation system and the repetitive boring class activities. In addition to this, the lack of facilities resulting in overcrowded classrooms teachers generate high anxiety and a non-communicative learning environment.

The Impact of the Use of Duolingo on ESP learners Oral Proficiency Improvement

The results of the experimentation reveal that by comparing the performance of both groups before the treatment (the use of Duolingo), there was no significant difference between groups. After the use of Duolingo for 3 months, a consistent improvement of the Experimental Group oral performance (mean=13.75) over the Control Group (mean=11.05) was recorded. The analysis of variance (ANOVA) in Table 5 displays a p-value $p=.000153 < \alpha=0.05$ (the significance level). This value demonstrated that there is a statistical significance between groups performance correlated to the use of Duolingo. The practical level of correlation/association between the use of Duolingo and the learners' oral communication, which is assessed by the measure of association in Table 6

with the Eta squared value of ES= .318, shows a strong correlation between the dependent variable (learners overall score) and the independent variable (use of Duolingo). This means that 31.8 % of the improvement of learners' performance in oral communication can be credited to the impact of the use of Duolingo. The present result corroborates the respondents' unanimous acknowledgement of the effectiveness of Duolingo in fluency and accuracy improvement.

Such an improvement is possible because Duolingo simulates authentic language use through motivating and entertaining activities. It also provides continuous evaluation and constructive instant feedback. Unlike the traditional classroom, this allows self-regulated autonomous learning. In addition, the content of Duolingo uses integrated languages skills development approach with an artificial intelligence guided Learner-Centred Learning. With Duolingo, learners discovered ludic learning. Duolingo further sparks learners' pleasure to use a mobile phone. This makes them spend hours in a game like learning while developing real-life communicative competencies from the basics of face-to-face communication routines to more complex professional language. According to Cîrceie (2015, p.456),

> *"The ludic electronic process can take place beyond the limits of time and space. It occurs according to the orientation regarding the child personality development, and implicitly according to the permanent learning, enlarging the flexibility of thinking by children, their individualization and the complementary role of non-formal learning".*

This means that electronic games like the aspect of Duolingo effectively leads to the decrease of the traditional status quo in ESP classes and increases flexibility and efficiency. In today's education learning, playing should be a core feature of any effective curriculum. According to Cretu (1999), Games firstly shape the psycho-physiological functions of the sensorial, movement, and intellectual. It further supports conceptualisation and abstraction, memory, and movement. Games also enable the knowledge of certain life environments, namely school, agriculture, crafts, and industries.

Integrating Duolingo in the Beninese ESP Classes

The use of Duolingo in the Beninese context is subject to substantial challenges. The respondent teachers identify the high cost of the internet and good smartphones, the poor internet network coverage, and the fact that Duolingo is not 100% free since the advanced features are unlocked for the paid version only. More specifically, even if Duolingo is effective in oral communication skills development like most ai-based mobile language learning apps, there are real difficulties to decoding artificial intelligence speech for low language proficiency learners. Also, the content of Duolingo is to some extent uncontextualized for Beninese learners.

Discernibly, M-learning apps are not meant to replace teachers in ESP classes. Thus, they should rather be used as supplements to traditional teaching-learning. For example, teachers can give learners assignments to monitor their evolution while using the apps themselves according to learners' level. The teacher can check the effective use of the app by giving assignments that simulate the skills development activities within Duolingo. All this should be done as a homework assignment because mobile devices are still not authorised in Beninese ESP classes. The teachers' role is to guide learners through the app, thus targeting the specific skills needed to be developed. He/she has to make sure there is a minimum yet consistent use of the apps over a given period. Nevertheless, learners use of the app should neither be restricted nor controlled by the teachers. This means that the ESP learners' autonomy should be preserved.

One of the main barriers to the integration of mobile app as a supplement to the traditional ESP curriculum is that most teachers (60%) are not comfortable with technologies. Any improvement in language teaching/learning requires appropriate training of the education stakeholders. However, English Language teachers should not wait for official training from the ineffective supervision staff. They have to invest in their professional development by grabbing any opportunity to get trained. An effective way to do so is to get familiar with technologies through digital literacy training. This will allow them to access the unlimited resources available online and enrol in online courses, attend webinars, and most importantly familiarise themselves with language learning apps such as Duolingo.

Duolingo app can also improve ESP teachers' language proficiency and improve their performance which will have a positive impact on their learners

Conclusion

This study sheds light on the challenges of the Beninese ESP teaching-learning process in the context of the COVID-19 pandemic with its protective measures that have negatively impacted classroom practice. This raises the international community awareness of the importance of technologies, distance learning and M-learning, especially in a foreign language context. Therefore, an experimental mixed methodology proves that there is a significant improvement in oral proficiency credited to the use of Duolingo after 3 months. The effectiveness of Duolingo is attributed to the fact that it unifies learning and gaming providing an autonomous relaxed and entertaining learning environment unlike the traditional classroom teaching and stressed ambience. Nonetheless, the objective of using Duolingo is not to replace the traditional language courses but to supplement it so as to create a bridge between the classroom and the real world. This in turn will artificially yet consistently increase ESP learners' language exposure. The result of this paper suggests that integrating M-learning apps in the official language course requires specific training for ESP teachers in digital literacy in order to get familiar with technologies and M-learning apps. Doing this will enable them to take advantage of the unlimited resources available online to positively impact their professional life.

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Participation in Physical Activity Contributes to Adolescents' Physical Activity Attitudes and Quality of Life Related to Their Body Image

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Doi:10.19044/ejes.v9no1a39 URL:http://dx.doi.org/10.19044/ejes.v9no1a39

Submitted: 17 September 2021
Accepted: 04 March 2022
Published: 31 March 2022

Abstract

Physical activity (PA) habit decreases and Body Image (BI) becomes important during adolescence. This paper focuses on determining two things: whether the level of participation in PA contributes to adolescents' PA attitudes and their quality of life-related body image and to examine whether there is a difference. The study utilized the cross-sectional design. 1281 individuals in the middle adolescence period participated in the study. Participants were between 15 and 17 years. International Physical Activity Questionnaire Short Form (IPAQ-SF), Cognitive Behavioral Physical Activity Questionnaire (CBPAQ), and Body Image Quality of Life Inventory (BIQLI) were used as data collection tools. According to the study findings, there were significant differences in the BIQLI total, interaction with the opposite sex, and influence behavior/attitude between those who engaged in regular or irregular PA and those who did not engage in PA at all. Difference in the effect on self-efficacy and daily life sub-dimension was found between those who engaged in regular PA and those who did not. Outcome expectation and self-regulation items of those who engaged in PA were higher than for those who did not. Since adolescents are expected to engage in regular or irregular PA, personal barriers in front of them must be removed. It is therefore important to support their attitudes, which positively affects their PA, because participation in PA contributes positively to their PA and BI-related quality of life.

Keywords: Adolescence, Physical Activity, Body Image, Quality of Life

Introduction

Physical activity (PA) is the basic determinant of physical, physiological, mental, and social health in adolescence (Aubert et al., 2018). Although the World Health Organization (WHO) recommends moderate physical activity for adolescents, which means at least 60 minutes per day to prevent chronic diseases such as cardiovascular diseases and obesity (WHO, 2010; 2018), 75-81% of adolescents aged 11-17 do not follow this recommendation (Herting & Chu, 2017; Seidu et al., 2020; Guthold, Stevens, Riley, & Bull, 2020). PA participation levels decline from childhood (9 years old) to middle adolescence, while sharper declines are observed by the age of 15 (Cairney, Veldhuizen, Kwan, Hay, & Faught, 2014; Bacil et al., 2015). In the middle adolescence period between the ages of 15-17, the level of PA decreases and at the age of 16-17 they become individuals with low PA levels (Chen, Haase, & Fox, 2007; Duarte et al., 2020). The reason for

this decline may be that the individual tries to get used to his/her changing body and seeks a personality that covers his body (Şahin & Çövener-Özçelik, 2016). This is because adolescents give great importance to body image (BI) during this period (Singh, Mahato, Singh, Thapa, & Gartland, 2019) and BI affects their quality of life (Christie & Viner, 2005).

BI is a multi-factorial structure that includes the perceptual dimension (how he/she sees himself/herself), the emotional dimension (the way he/she feels), the cognitive dimension (the thought of body view), and the behavioral dimension (emotion-based behaviors) (Gardner, 2011; Voelker, Reel, & Greenleaf, 2015). When body dissatisfaction occurs, people become depressed (Stice, 2002), and depression leads to social isolation (Tran et al., 2019). Thus, it is important to identify factors that may affect BI of adolescents (Pelegrini et al., 2014; Singh, Mahato, Singh, Thapa, & Gartland, 2019) whose concern about it is increased. PA is one of the factors that influence BI. Although BI is reported to be affected by physical inactivity (Harriger & Thompson, 2012), BI dissatisfaction of the individuals who engage in PA (Gibson et al., 2019) led to this confusion. Therefore, physical inactivity increases in middle adolescence but regular PA can be an important predictor of health in many ways (Rica, Bocalini, Miranda, Valenti, & Gama, 2018). Even during this period, the level of PA can regulate the perception of quality of life associated with BI and this can change PA behavior in the following years.

It becomes a little more complicated when BI is considered in terms of regular PA behavior because the concept of physical excellence of those who do regular PA can change due to the need for success. BI perception of the athletes who try to reach their ideal BI may be impaired and it may lead to disorder in the quality of life (Kristjánsdóttir, Sigurðardóttir, Jónsdóttir, Þorsteinsdóttir, & Saavedra, 2019). The body needed to achieve good performance, especially in a particular sports branch, may not match the aesthetic standard of society. This can pave the way for an athlete's dissatisfaction with BI (Goltz, Stenzel, & Schneider, 2013). Although athletes express their BI dissatisfaction under pressure (Kristjánsdóttir, Sigurðardóttir, Jónsdóttir, Þorsteinsdóttir, & Saavedra, 2019), it can change even in a single season (Neves et al., 2017). According to their control periods, athletes report less BI dissatisfaction (Karrer et al., 2020). Thus, this indicates that the perception of BI may vary according to the conditions studied among those who engage in regular PA.

As seen in the different results of the studies, the relationship between PA and BI is complex. Many studies have focused on the positive results of PA associated with BI (Laudańska-Krzemińska, Krzysztoszek, Naczk, &Gajewska, 2020) and how PA-based interventions could improve BI (Martínez-Sánchez, Martínez-García, Martínez-García, & Munguía-Izquierdo, 2020). Although some of the researches have focused on the positive relationship between BI and PA in men and women, the role of gender has remained unclear (Slater & Tiggemann, 2011). While one study found a high effect in favor of women (Hausenblas & Fallon 2006), another study did not reveal the same result (Sundgot-Borgen et al., 2021). Since these different results are associated with PA or BI-related cases, the mechanisms of cross-gender differentiation are still not fully decipherable.

The World Health Organization (WHO) reports that by 2030, the level of physical inactivity should be reduced by 15%. This can be achieved by making adolescents gain the habit of engaging in PA (Bull et al., 2020). For this reason, PA attitudes must be known. It is also important to know whether the level of PA affects the quality of life associated with BI. This is because BI is an important determinant of the continuation of PA in the adolescence period rather than skill (Foley Davelaar, 2021). Overtime, differences have been observed in terms of BI-related quality of life between each PA types and between those who engage in PA and those who do not. Nonetheless,

further research is still needed due to the different results in the literature. In studies where men and women are evaluated together, men are considered to be more physically active. However, including different aspects to the gender factor (Cognitive-Affective-Behavioral) so as to evaluate the differences between PA and BI can provide a better understanding. In addition, the study includes the level of PA as a new variable. Hence, the objective of this study is two folds: to determine whether the level of PA participation contributes to the PA attitudes of adolescents and their BI related quality of life and to examine whether there is a difference between the genders.

Method

Ethics and Research Design

A cross-sectional design was conducted for the research. The dependent variable of the research was the score from the scales. Purposeful sampling technique was used for sampling. Equal/similar age (15-17 years), gender, education, and PA levels in adolescence period were taken into consideration for purposeful sampling. Since it may change, BI or PA perceptions of those whose body mass indexes (BMI) were accepted as normal (between 20.0 and 22.9) were included in the study. Participants and their families were informed about the purposes and procedures of the research before the data were collected. The participants were informed that participation in the study was based on voluntary principle and they could leave it at any time. Consent forms stating that they were volunteers were signed. Those who had chronic health problems and took medications that would prevent them from doing physical activity were not included in the study. Ethics Committee permission was obtained from Uşak University (06.05.2021 date and 2021-94 decision). The study was conducted in accordance with the Declaration of Helsinki.

Study Group

The study included 1281 individuals between the ages of 15 and 17 in the middle adolescence period. Among the individuals who participated in the study, 45.7% (586) were females and 54.3% (695) were males. 441 people (32.2%) were 15 years old, 400 people (33.4%) were 16, and 440 people (34.4%) were 17. Some participants who engage in PA under the control of a coach and also participate in sports, such as basketball, football, volleyball, handball, tennis, and cycling, where physical appearance does not matter were included in the study. Participants from sports, such as fitness, gymnastics, ballet, and dance, where physical appearance is important were not included in the study. Irregular PA participants were individuals who tried to perform indoor or outdoor sports, such as spinning, squash, pilates, cardio, and hiking, under the supervision of a coach. However, they did not participate regularly. None of the participants had previously been on a weight loss diet. Just before scale applications, weight measurements were performed with the Jawon Make body composition analyser (Model IOI-353) with 0.1 accuracy on bare feet when they had light clothing on them. Height measurement was also taken with a portable stadiometer (Seca Corporation, USA) which had 0.1 cm accuracy. BMI was calculated by dividing weight by height (kg/m^2). Trained expert surveyors applied the scales. In order to ensure participants' focus and privacy, scales were applied in groups of 25-30 people in a large room. Participants were encouraged to write down their thoughts and they were informed that the measurement results were confidential. They were also told that they could leave the study when they wanted at any stage of the study.

Scales and Application

International Physical Activity Questionnaire Short Form (IPAQ-SF)

In order to determine the levels of PA, IPAQ-SF which was developed by Craig et al. (2003) was used. It is a valid method used in many regions of the world (Aibar, García-González, Abarca-Sos, Murillo, & Zaragoza, 2016; Gallardo, Abarca-Sos, & Doña, 2020) and was adopted into Turkish culture by Sağlam et al. (2005). Calculation was made depending on the fact that each activity in IPAQ-SF required at least 10 minutes. After determining the day and minute curves, the MET value (as score) was found by multiplying the result. According to MET score, classification was recorded as very active (>3000 METmin/week), minimal active (600-3000), and inactive (<600) (Craig et al., 2003). In addition, the results were compared with the U.S. Department of Health Services' age-specific PA recommendations and it was examined whether they were compatible or not (Physical Activity Guidelines Advisory, 2021). Those who could not meet the criteria were not included in the study. According to the data, 435 people were categorized as regular PA (very active), 401 were grouped as irregular PA (minimally active), and 445 were classified as non-PA (inactive). Cronbach α internal consistency value of IPAQ-SF was tested at the end of the study and its reliability was found to be good (α= 0.781).

Physical Activity Attitude

Cognitive Behavioral Physical Activity Questionnaire (CBPAQ) was developed by Schembre et al. (2015) for the individuals at the age of 13-17. It was adopted into Turkish culture by Eskiler et al. (2016). The scale identifies the social and cognitive aspects of PA. It consists of 15 items and 3 subsamples. Scale identifies the loadings depending on participation to PA as "Outcome Expectations" (Positive, Negative). Also, how adolescents adopt PA into their life was identified as "Self-Regulation" (Self-Management, Goal Setting, Planning, Contingency Management), while adolescents' real reasons of being constrained in participation to PA was categorized as "Barriers" (Lack of Social Support, Lack of Motivation, Lack of Self-Confidence, Lack of Time, Environmental Constraints, Insufficient Capabilities). A five-point Likert scale was used with points from 1 ("low") to 5 ("high"). Each subscale score was calculated by averaging the raw scores of 5 items. The internal consistency coefficient of the scale is α=.84. The reliability of the scale that was applied (CBPAQ) was tested. Cronbach α internal consistency value was found sufficient for this age group (α=.782).

Body Image Quality of Life Inventory (BIQLI)

The BIQLI was developed by Cash and Fleming (2002), and it was adopted into Turkish culture by Demiralp et al. (2015). BIQLI measures the positive and negative aspects of the psychosocial areas of BI on a person's quality of life (Cash, Jakatdar, & Williams, 2004). There are 19 items and 4 subsamples in Turkish version. It is a valid and reliable measuring tool used in many languages and cultures (da Silva, 2020). Subsamples of the scale were "Effect on Self-value", "Effect on Daily Life", "Effect on Interaction with Opposite Sex" and "Effect on Behavior/Attitude". Each item was scored from +3 to -3. Positive scores from the scale indicate that body image affects the quality of life at a positive level, and negative scores affect it negatively. Internal consistency of the scale was very high (α= .95). 2-3 weeks' test-retest reliability was 0.79. Cronbach α internal consistency of the study was measured as good (α=.882).

Statistical Method

SPSS 21.0 was used to analyse the data. Descriptive statistics were given as number,

percentage, average, and standard deviation. Kolmogorov-Smirnov test was applied to examine whether the data showed normal distribution. A comparison of the average scale score with a normal distribution was made with independent t-test groups. For multiple comparisons, One Way Anova Test was used while Tukey HSD was used for the Post Hoc test. The statistical significance level was considered as $p<0.05$.

Results

Table 1. Comparison of PA Attitude and BI Quality of life According to PA Level

	PA Levels	**N**	***M***	***SD***	**F**	**P**
Effect on self-value	RPA Group	435	12.10 ^{A}	7.14	6.797	0.001*
	IPA Group	401	11.29 ^{AB}	6.74		
	NPA Group	445	10.24 ^{B}	7.38		
Effect on daily life	RPA Group	435	7.65 ^{A}	5.95	4.412	0.012*
	IPA Group	401	7.16 ^{AB}	5.79		
	NPA Group	445	6.40 ^{B}	6.07		
Interaction with opposite sex	RPA Group	435	5.72 ^{A}	4.76	17.488	0.000*
	IPA Group	401	5.23 ^{A}	4.52		
	NPA Group	445	3.85 ^{B}	4.79		
Effect on behavior/attitude	RPA Group	435	4.20 ^{A}	4.30	22.760	0.000*
	IPA Group	401	3.67 ^{A}	3.97		
	NPA Group	445	2.27 ^{B}	4.44		

BIQLI Total	RPA Group	435	29.67 **A**	18.53		
	IPA Group	401	27.36 **A**	16.71	15.898	0.000*
	NPA Group	445	22.77 **B**	17.98		
Outcome expectations	RPA Group	435	3.75 **A**	0.99		
	IPA Group	401	3.54 **A**	1.00	13.965	0.000*
	NPA Group	445	3.38 **B**	0.94		
Self-regulation	RPA Group	435	3.31**A**	0.86		
	IPA Group	401	3.18 **A**	0.82	48.156	0.000*
	NPA Group	445	2.76 **B**	0.85		
Personal Barriers	RPA Group	435	2.96 **B**	0.89		
	IPA Group	401	2.92 **B**	0.82	10.097	0.000*
	NPA Group	445	3.15 **A**	0.75		
CBPAQ Total	RPA Group	435	3.34 **A**	0.66		
	IPA Group	401	3.21 **A**	0.65	13.999	0.000*
	NPA Group	445	3.10 **B**	0.62		

* P<0.05 means significant difference. **A, B:** Different letters in the same column indicate the difference between the groups. RPA: Regular Physical Activity, IPA: Irregular physical activity, NPA: Non-physical Activity.

There was no difference between regular PA group and irregular PA group in terms of BIQLI total, interaction with opposite sex, effect on behavior/attitude, CBPAQ total, outcome expectations, and self-regulation. However, there was significant difference between regular and irregular PA groups and non-physical activity group (P<0.05). While there was no difference between regular physical activity group and irregular physical activity group in terms of effect on self-value and effect on daily life, statistically there was difference between regular PA group and irregular PA group (P<0.05). Furthermore, there was difference between non-physical activity group, regular physical activity group, and irregular physical activity group in terms of personal barriers (P<0.05; Table 1).

Table 2. Comparison of the Gender Variable Independent of Groups

	Gender	**N**	***M***	***SD***	**T**	**p**
Effect on the self-value	Female	586	11.02	7.27	-0.559	0.576
	Male	695	11.24	6.97		
Effect on daily life	Female	586	6.95	6.00	-0.444	0.657
	Male	695	7.09	5.91		
Interaction with opposite sex	Female	586	4.26	4.55	-4.343	0.000**
	Male	695	5.40	4.83		
Effect on behavior/attitude	Female	586	2.71	4.49	-4.744	0.000**
	Male	695	3.84	4.06		
BIQLI Total	Female	586	24.93	17.35	-2.657	0.008**
	Male	695	27.58	18.18		
Outcome expectations	Female	586	3.60	0.99	1.861	0.063
	Male	695	3.49	0.99		
Self-regulation	Female	586	2.99	0.83	-3.003	0.003**
	Male	695	3.14	0.90		
Barriers	Female	586	3.10	0.80	3.657	0.000**
	Male	695	2.93	0.83		
CBPAQ Total	Female	586	3.23	0.61	1.143	0.253
	Male	695	3.19	0.68		

* P<0.05 means significant difference.

All individuals involved in the study were compared by gender factor. Regardless of PA, females had more Personal Barriers (Lack of Social Support, Lack of Self-confidence, Lack of Time, Environmental constrains) than males in engaging in physical activity. Nevertheless, their level of self-regulation (Self-management, Goal Setting, Planning) was less than males (P<0.05). Scores of the male participants in terms of BIQLI total, effect on behavior/attitude, and interaction with opposite sex were higher than the females (P<0.05; Table 2).

Discussion

It is known that PA provides a healthy body function for adolescents (Alghadir, Gabr, & Iqbal, 2020) and affects their academic success (Barbosa et al., 2020). Apart from academic success, it is also related with cognitive skill. Interestingly, it is reported in studies that PA influences a number of targeted processes known as executive functions including planning and self-regulation (Herting & Nagel, 2012; Belcher et al., 2021). Thus, it is especially important for the consistency of the results of this study to show that high-intensity PA or regular participation in PA can support planning and goal setting (Herting & Chu 2017). In the world, most adolescents aged 11-17 do not engage in PA (Seidu et al., 2020; Guthold, Stevens, Riley, & Bull, 2020). In the study, personal barriers such as lack of social support, lack of motivation, and time were stressed as barriers to active participation in PA. When the study was analysed, it was observed that the results of social support were positively related to participating in PA and the level of PA (Robbins et al., 2018). Therefore, it is necessary to continue motivation to maintain and increase the level of PA (Demetriou et al., 2019). The fact that lack of time is the most common reason for not engaging in PA at least once a week (Pelletier, Shanmugasegaram, Patten, & Demers, 2017) support the

findings of this study. PA plays a key role in many aspects of children's emotional and physical well-being, both in the short and long term. Thus, creating and expanding motivating factors is vital for adolescents to continue PA (Yaffe, 2018). Families and friends have quite a significant social impact/support on the level of physical activity of adolescents (Cheng, Mendonça, Farias &Júnior, 2014). When they engage in PA, declines in their performance is observed easily. Pre-regulation which plays an important role in those declines should be taken into consideration (Dishman, McIver, Dowda, Saunders, & Pate, 2019). More so, social support to participate in PA should be provided (Draper, Grobler, Micklesfield, & Norris, 2015).

In the study, the level of PA in adolescents was regarded as an important factor that affects the quality of life associated with BI. In order to determine the relationship between regular PA participation and BI, Hausenblas and Downs (2001) noted in meta-analysis studies, where they included adolescents between 1975-2000, that adolescents who engaged in regular PA had a more positive BI than those who did not actively participate in PA. The fact that Kantanista et al. (2018) pointed out that athletes competing internationally had a more positive view of BI than those performing nationally confirms the results in this study. PA plays an important role in adolescents' perception of the body and self-esteem (Altıntaş et al., 2014). Finne, Bucksch, Lampert, and Kolip, (2011) stated in their study that BI dissatisfaction was associated with lack of PA among adolescents, while Daniel et al. (2014) stated that adolescents with less frequency and duration of PA had more BI anxiety. It was pointed out that large number of adolescents reported that BI was associated with lower frequency and fewer PA applications during the week. Knowles, Niven, Fawkner, and Henretty, (2009) found in their study that physical perceptions partially explained the variance in PA change and physical appearance was an important individual predictor of PA. When BI dissatisfaction was examined in terms of regular PA and irregular PA, the results were similar. The difference between elite and non-elite athletes are expressed as uncertain (Neves, 2016). Regular PA is associated with more experience, greater awareness of individuals' bodies, and a more positive BI. Regular PA can also protect adolescents from BI concerns (Varnes et al., 2013).

Studies that may contradict with the results in this study often involve sports that require aesthetics. The fact that those who are engaged in sports that require aesthetics have a lower BMI than those who are engaged in non-aesthetic sports can affect results. BMI is an important factor leading to negative BI development in athletes (Fernández-Bustos, Infantes-Paniagua, Gonzalez-Martí, & Contreras-Jordán 2019). Meyer, Weidmann and Grob, (2021) found a positive link between PA and life satisfaction, and they noted that perceptions of being weak or overweight changed the impact of PA on it. However, this research included a relatively homogeneous group in terms of BMI. Having a similar BMI between groups that engage in PA and those who do not engage in regular PA may have decimated the negative pressure that could occur on BI and provided a healthier result. A similar study on BMI found that athletes from aesthetic sports were not different from athletes who were recreationally active in terms of overall body dissatisfaction (Krentz & Warschburger, 2011). Therefore, the balanced study groups that have been created may be important in terms of making the impact of PA on BI more understandable, especially during adolescence when the percentage of body fat increases and the hips develop (Greydanus, Omar, & Pratt, 2010).

When regular PA participants were compared in terms of gender, there were no differences in terms of the impact of BI on overall quality of life and subsamples. It was noted in the study that regular PA was associated with positive BI results (Laudańska-Krzemińska, Krzysztoszek, Naczk, & Gajewska, 2020). Regular PA levels were positively associated with mental health, especially

quality of life in adolescence, and decreasing possibility of psychological distress (Guddal et al., 2019). In the study, similar regular PA groups were included and negative situations (sports requiring BMI, weight, and aesthetics) that might affect BI were eliminated by revealing gender-specific norms. It was important since it indicated that regular PA decayed psychosocial differences between genders and equally affected BI related quality of life for both genders. The most interesting results in the study revealed that women with irregular PA and non-PA got lower scores in "behavior and attitudes" and "effect on interaction with the opposite sex" than men. The results can pave the way for gender-related studies. This is because BI-related studies of gender differences indicate that girls, especially in adolescence, are more affected by BI than boys (Slater & Tiggemann 2011; Bassett-Gunter, McEwan, & Kamarhie, 2017; Jalali-Farahani, Amiri, Zarani, & Azizi, 2021). Therefore, the results are in accordance with the findings because girls give priority to body form. On the other hand, physical functionality, strength, and proving themselves are important for boys (Meyer, Weidmann, & Grob, 2021; Jalali-Farahani, Amiri, Zarani, & Azizi, 2021). These results also show that adolescents' gender roles in society have positive or negative effects on BI. Regular PA can protect adolescents from anxieties of BI related quality of life with "outcome expectations" or "self-regulation" (self-management, setting goals).

In the study, it was found that personal barriers (Lack of Social Support, Environmental Constrains) were more common in adolescent girls who engaged or did not engage in PA than boys. These results were very consistent with the results of a very large-scale study (Wang, Hsieh, Hsueh, Liu, & Liao, 2019; Guthold, Stevens, Riley, & Bull, 2020). In all the countries compared in the study, girls had lower PA levels than boys did. The study also stated that inter-gender outcomes had not changed since 2001 (Guthold, Stevens, Riley, & Bull, 2020). One of the main reasons for the decrease in PA level or not engaging in PA is that an individual may think that he or she lacks skill (Marcus, Selby, Niaura, & Rossi, 1992). At the same time, PA level is low in girls with low self-efficacy. In addition, adolescent girls who maintain a high perception of social support experience less decline in PA. High self-efficacy can prevent decline in PA despite decreased social support. However, adolescent girls with high self-efficacy experienced more decline in PA when they perceived a decline in social support (Dishman, Saunders, Motl, Dowda, & Pate, 2009). Although perceived social support from family and friends may seem associated with PA among adolescent girls (Laird, Fawkner, Kelly, McNamee, & Niven, 2016), it is shown in the study that the cultural environment may have a stronger relationship with PA (Martins et al., 2021). The results emphasize that girls need more social support than boys to continue physical activities.

In addition, the study has some limitations, but it also has some strengths. One of its key strengths is the limited and close number of adolescent girls and boys. Factors that may affect internal validity were excluded as much as possible in order to limit the study. One of the limitations of the study is the cross-sectional study design, which does not allow causal connections to be established. In the study, factors affecting PA and BI related quality of life were evaluated with their own notifications. Nevertheless, this method is commonly used by researchers who rely on secondary sources of data. The most important feature of the study indicates that it is the first study that has focused on the level of PA. While other studies compare doers and non-doers of PA and sports types, regular PA and irregular PA was analysed. Elements that could affect each other in the gender factor were eliminated, but the number of genders in their own groups could not be balanced. Since the averages were compared, it was assumed that it had no effect on the results. Nonetheless, this difference must be kept in mind while evaluating the results.

Conclusion

According to the findings, there are significant differences in the BIQLI total, interaction with the opposite sex, and impact on behavior/attitude between those who engage in regular or irregular PA and those who do not engage in PA at all. A difference in the effect on self-efficacy and effect on daily life sub-dimension is found between those who participate in regular PA and those who do not. Outcome expectation and self-regulation items of those who participate in PA are higher than those who do not. Adolescents who do or do not engage in PA still have a number of personal barriers in front of them. Studies show that while the prevalence of inadequate PA has decreased slightly in boys since 2001, there has been no change over time in girls (Guthold, Stevens, Riley, & Bull, 2020). If these trends continue, it seems that the 15% decline that the WHO targets in PA inactivity by 2030 will be impossible. According to the results, it is clear that in order to increase the regular or irregular PA of adolescents slightly, outcome expectations and the requirements for self-regulation must be supported. This can increase the impact on the BI-related quality of life of adolescents who engage in regular or irregular PA. Thus, it is recommended that experts in their studies on PA level should keep the following in mind: research factors for overcoming social barriers, the effect of the cultural environment, and the impact of the physical and social environment on adolescent girls and boys.

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