Investigation of Secondary School Students' Critical Reading Skills and Listening/Watching Usage Strategies by Structural Equation Model

Aysel Arslan [i]
Sıvas Cumhurıyet Unıversity

Abstract

The purpose of this study is to examine secondary school students' critical reading skills and listening/watching strategies in line with different variables, and to determine whether their critical reading skills have an effect on their listening/watching strategies. The sample of the research consists of 800 students, 380 girls, and 420 boys, in the fall semester of the 2021-2022 academic year. The data of the study were collected using the general survey model, one of the quantitative research methods, and a randomized research design. The research data were obtained with "*Critical Reading Scale"* and "*Frequency of Using Listening/Watching Strategies Scale*". For the assumption of normality, the skewness and kurtosis values of the data were examined. In the analyses, independent groups t-test, single groups ANOVA, Tukey tests, and path analysis (Path) in accordance with structural equation modeling (SEM) were used. The findings of the analyses showed that the variables of gender, class level, education level of the mother and father lead to a significant difference in the total scores of both scales and in the sub-factors of frequency of using listening/watching strategies. The findings of the path analysis showed that the established model was acceptable, and it was found that students' critical reading levels had a significant and positive effect on the level of listening/watching strategies they used.

Keywords: Critical Reading, Listening/Watching, Strategy, Secondary School, SEM

DOI: 10.29329/ijpe.2022.439.20

---

[i] **Aysel Arslan,** Assist. Prof. Dr., Educatıonal Scıences, Sıvas Cumhurıyet Unıversty, ORCID: 0000-0002-8775-1119

Email: ayselarslan@cumhuriyet.edu.tr

INTRODUCTION

Reading is the process of making sense of, interpreting, and evaluating a material on which elements such as symbols, signs, and pictures are written. Since an individual acquires a significant portion of the information they acquire throughout life via reading, it is one of the skills that should be emphasized. Reading enables an individual to adapt to the time he is living in and acquire information needed for self-improvement. The process of acquiring and using the skill of reading is a quite complex process in itself. Demirel (2004) states that reading is a skill that develops and shapes both the real world and the mental world of the individual and plays an important role in communication and interaction with other individuals. Although the reading skill is related to the perceptual skill of the individual, it is not limited to this. It requires simultaneous use of perceptual, physical, and psychological skills (Nosich, 2015). In the reading process, individuals use their brain, eyes, and body in a coordinated way. Güneş (2011) argues that reading has a complex mechanism involving seeing, perceiving, comprehending, vocalizing, memory, and forming a meaningful pattern, in which the organs that make up the brain, eye, and voice work together.

There are different types of reading according to the purpose and expectation of the individual from the reading process. Prominent among these are reading aloud, reading silently, skimming, free reading, reading by guessing, and critical reading. Critical reading is a type of reading in which the individual asks questions throughout the reading process in order to determine the purpose of the text, its suitability with the context and the data, as well as to determine the consistent and inconsistent aspects and contradictions between the ideas within the text. In the process of critical reading, the individual asks questions in relation to the text. In this way, various processes take place in the cognition, such as examining cause and effect relationships, analyzing, synthesizing, arranging, comparing, deducing, discussing, evaluating, and problem solving (Ennis, 1993; Halpern, 2003). In this context, it can be argued that critical reading leads individuals to use their minds actively and improves their multi-dimensional thinking competence. Ünalan (2010) states that the main purpose of critical reading is to achieve a correct understanding of the text. After reading the text, individuals should evaluate what they understand. They should interpret and criticize the text. They should make inferences by using the conclusions they have reached through their own minds and logic (Özensoy, 2011). Individuals who do critical reading should have confidence in their own decisions and attention regarding accepting, rejecting, or putting on hold an idea (Ruggiero, 2011).

Critical reading is based on using critical thinking skills related to finding meaning and interpreting (Hoffman, 1992). Individuals who do critical reading know the purpose of reading, their command of the subject and words of the text they read, the effectiveness of the resource, and the strategies they use (Dalton, 2009). The individual who is successful in critical reading is expected to take an active part in the reading process, make evaluations, ask questions, and achieve the goal of reading at the end of the process (Collins, 1993). In this sense, it is seen that critical reading activates the mind (Benesch, 1993). Individuals' critical reading skills develop in parallel with their own power of thinking (Winter, 2018). When individuals practice multi-dimensional thinking competence by activating their mental skills, they can easily solve problems related to reading and find scientific results that will support the meaning they have created (Willingham, 2020). Moreover, they will easily analyze the layers of meaning within the text, realize the ways of developing the way of thinking used by the author, and establish meaning integrity by determining the author's purpose for writing the text (Allen & McNamara, 2020).

Critical reading allows individuals to approach the text purposefully and consciously with a professional perspective. In this sense, they will have a holistic approach by employing other skills such as writing, listening/watching, which are based on metacognitive activities during the reading process (Bosley, 2008). In this context, it is seen that linguistic skills defined as speaking, writing, reading, and listening have a unity, and the effective use of linguistic skills is interrelated with other skills (Dolean, Lervåg, Visu-Petra, & Melby-Lervåg, 2021; Sadiku, 2015). Listening skill, which is argued to be the first skill acquired in the process of language acquisition, is the basis for the individual to acquire other language skills. Listening is also highly important because it is the most

important skill used throughout life in acquiring new information, communicating in social life, and establishing relationships (Feyten, 1991; Kaya, 2018; Purdy, 1997). In order for individuals to practice effective listening, they must first focus on the source of the sound, make a conscious effort to perceive the words, and analyze the meaning of what they hear (Özbay & Melanlıoğlu, 2012; Robertson, 2002). Vandergrift (2004) argues that listening is the most difficult skill to determine whether the individual has acquired it correctly and completely, and it is also the most neglected, and thus the least practiced skill. Mead and Rubin (1985) expressed it as a skill based on various different analytic and interpretive processes. Temur (2001) defined listening as establishing a connection between the pieces of information by following what the speaker says and taking what is heard as a whole, whereas Sever (2004) defined it as an effort to understand what is heard and keep it in the mind. Moore (2001) states that there are three basic stages of listening: attention, perception, and evaluation, and each stage is a process that interacts with and affects the others.

In the Turkish Language Course Curriculum (TLCC), listening skill is considered together with watching and defined as a listening/watching skill area. With the activities related to listening/watching in TLCC, it is aimed to develop high-level thinking skills such as ranking, classifying, associating, questioning, interpreting, criticizing, evaluating, and making inferences (Ministry of National Education, 2006). Furthermore, listening acquisitions have been arranged in a hierarchical structure in line with different grade levels and in accordance with the principle of gradualism in teaching (Ministry of National Education, 2018; Ministry of National Education, 2019). The level of the students should be considered while determining listening skills, and the listening activities should be planned and implemented accordingly. With the development of listening skills, it is aimed to teach students how to use communication skills effectively as a result of the teaching process so that they become individuals who can actively participate in social life. In this direction, activities towards developing listening skills should be emphasized from the very beginning in the education process, and this skill should not be ignored in classroom practices (Abdolrezapour & Ghanbari, 2021). Studies show that developing listening/watching skills has a positive effect on learning (Fisher & McDonald, 2001; Şahin, 2015). Individual use listening/watching skills for different purposes throughout life. These purposes are gathered under many different titles such as language acquisition, communication, socialization, mental awareness, gaining mental independence, and critical reading (Mackay, 1997). During the listening/watching process, individuals use various different cognitive reading strategies depending on the subject. Although there are many different listening/watching strategies in the literature, it is seen that distinctive, comprehensive, therapeutic, critical, aesthetic, and meaningful listening strategies come to the fore. Which of these strategies an individual will use during a reading process is completely related to the purpose of reading. For example, the individual may use distinctive listening for visual and auditory stimuli, critical listening for content analysis, and meaningful listening for making sense of the content (Wolvin & Coakley, 1996). It has been found that inadequacies in listening/watching skills negatively affect learning other languages (Bozorgian, 2012). As a result, it is seen that activities for listening skills are given more place in curricula in order to improve listening/watching skills (Arslan, 2021).

Considering the studies investigating the effects of students' critical reading skills on different variables, it is seen that Aydın (2017) examined reading by discussion, Can (2017) examined finding implicit meanings, Course (2014) examined foreign language teaching, Cervetti, Pardales and Damico (2001) examined critical literacy, Arslan (2018)) examined reading strategies, metacognitive awareness, Lewin (2010) examined questioning strategies, Aghajani and Gholamrezapour (2019) examined critical reading and foreign language reading anxiety. No study has been found in the literature, investigating the effect of critical reading on listening/watching skills. However, in different studies, positive results were obtained from activities aimed at improving listening/watching skills (Casbergue & Harris, 1996; Hampleman, 1958). It is seen that students who learn how to use listening/watching strategies correctly and effectively are more successful in acquiring new knowledge. It is important to determine the factors that affect each skill in order for an individual to learn and use the language effectively. Although individuals start to acquire listening/watching skills from the moment they are born, it is important to use this skill strategically when they start going to

school. Listening/watching skill is the first step of education in academic life, and it is effective in achieving a high level of academic success (Güneş, 2019).

The Purpose of the Study

Based on the fact that all language skills affect each other, this study has been carried out to determine whether students' levels of critical reading have an effect on the frequency of using listening/watching strategies. Moreover, the average scores the students obtained from both scales have been examined in terms of different variables. The research questions that have been determined in accordance with the purpose of the research and whose answers have been sought are as follows:

1. Do secondary school students' critical reading levels and the frequency of using listening/watching strategies differ significantly by gender, grade level, and parents' educational status variables?

2. Does the critical reading level of secondary school students have an effect on the frequency of using listening/watching strategies?

METHOD

In this part of the research; Information on the model of the research, the sample group included in the research, the data collection tools applied, and the data collection and analysis processes are presented.

Universe/Sample

The research was carried out in accordance with the random sampling method, which is among the general scanning models. The population of the research consists of students who continue their education in secondary schools located in Sivas city center in the fall semester of 2021-2022. Within this universe, 800 (280 female-420 male) students attending 6 different middle schools are in the sample group of the study. Statistical data containing the demographic information of the students constituting the sample group are given in Table 1.

Table 1. Demographic information of the sample

Variables		*f*	%
Gender	Female	380	47.5
	Male	420	52.5
Grade Level	5th grade	218	27.3
	6th grade	180	22.5
	7th grade	168	21.0
	8th grade	234	29.3
Mother Education	Primary School	142	17.8
	Middle School	272	34.0
	High School	236	29.5
	University	150	18.8
Father Education	Primary School	98	12.3
	Middle School	190	23.8
	High School	266	33.3
	University	246	30.8

Looking at the participant information in Table 1, it is seen that male students are more than female students, and the eighth grade students constitute the group with the highest number with 29.3%. It was determined that the education level of the mother was higher than the other groups in the secondary school education level and the high school education level in the father's education situation.

Data Collection Tools

The data were obtained by using the "*Critical Reading Scale*" and "*Listening/Viewing Strategies Usage Frequency Scale*" applied to the students by the researcher.

Critical Reading Scale (CRS)

The scale developed by Ünal (2006) has 22 items and a one-dimensional structure. There is no negative item in the scale. The internal reliability of the scale was found to be 0.88 in the scale development study, and 0.95 in this study. It is seen that the scale has a high level of reliability according to both the development study and the results obtained in this study. Scale items prepared in a five-point Likert scale were graded between "Always=5 and Never=1". According to this grading, a minimum of 22 and a maximum of 110 points can be obtained from the scale. The item score ranges of the scale are found by subtracting the lowest score from the highest score obtained from the scale and then dividing the scale items by the number of options [(5-1)/5= 0.80]. Accordingly, in the scale scores; The standard score is obtained by dividing the score obtained by subtracting the lowest score from the highest score that can be obtained from the scale by the number of options on the scale [(110-22)/5=17.60] (Şad & Nalçaçı, 2015).

Listening/Viewing Strategies Usage Frequency Scale (LSUFS)

The scale developed by Doğan and Erdem (2017); It consists of a three-factor structure called Critical Listening/Viewing (CLV=6 items), Meaningful Listening/Viewing (MLV=8 items), Distinctive Listening/Viewing (DLV=5 items) and a total of 19 items. In the scale development study, the overall internal reliability of the scale was 0.89; in this study, it was found to be 0.95. The scale, which was developed in accordance with the five-point Likert type, has a rating of "Always=5 and Never=1". A minimum of 19 and a maximum of 95 points are obtained from the scale. The item score range of the scale items was found as [(5-1)/4=80), and the scale score ranges were found as [(95-19)/5=15.20].

Information on the evaluation of the scores obtained from the scales as low, medium and high is presented in Table 2 below.

Table 2. Scoring ranges for critical thinking dispositions

Score range		CRS	Scale reliability rating	Total score range
Item score	Scale score	Rating Range		
1.00-1.80	22.00-39.60	None	Low Level	22.00-48.40
1.81-2.60	39.61-57.20	Rarely	Middle Level	48.41-83.60
2.61-3.40	57.21-74.80	Sometimes		
3.41-4.20	74.81-92.40	Generally	High Level	83.61-110.00
4.21-5.00	92.41-110.00	Always		
Score range		LSUFS	Scale reliability rating	Total score range
Item score	Scale score	Rating Range		
1.00-1.80	19.00-34.20	Never	Low Level	19.00-41.80
1.81-2.60	34.21-49.40	Rarely	Middle Level	41.81-72.20
2.61-3.40	49.41-64.60	Sometimes		
3.41-4.20	64.61-79.80	Generally	High Level	72.21-95.00
4.21-5.00	79.81-95.00	Always		

For path analysis, CRS and LSUFS factor structures were tested with Confirmatory Factor Analysis (CFA), taking into account Anderson and Gerbing's (1988) two-step approach. CFA analyzes of the scales used in the study were performed and their findings are given in Table 2.

Table 3. CFA fit idex values of factor structures

Model Fit Indices	Good fit	Acceptable Compliance Values	CRS Values	LSUFS Values
χ^2/sd	≤ 3	≤ 5	4.797	4.885
GFI	≥ 0.95	≥ 0.90	0.903	0.914
IFI	≥ 0.95	≥ 0.90	0.923	0.936
CFI	≥ 0.97	≥ 0.95	0.923	0.936
RMSEA	≤ 0.05	≤ 0.08	0.069	0.070

It is seen that the values obtained as a result of the CFA analysis of the scales within the reference range of the fit values in Table 3 are within the acceptable range. The factor structures of both scales to which path analysis will be applied are confirmed.

Data Collection and Analysis

The data obtained in the research were analyzed using SPSS 25.0 and AMOS 23.0 package statistics programs. Normality tests of the scores obtained from the scales were performed by applying the Kolmogorov-Smirnov (K-S) test, since the number of participants was n>30. It was determined that the assumption of normality was not met, but the skewness and kurtosis values were within acceptable limits (±1.96) (CRS= ±Skewness= -0.939; Kurtosis= 0.112 / LSUFS= ± Skewness= -0.491 / -0.851; Kurtosis= 0.136 / -0.471) was determined. Assuming that the normality was met, descriptive statistical methods were applied to the data (Number, Percent, Arithmetic Mean). In the analysis of the data, independent groups t-test was used for the gender variable and one-way ANOVA was used for the other variables. Tukey analysis was used to determine the groups with significant differences in the factors determined to be significantly different in the ANOVA test. In the analysis of the findings, the margin of error was taken as 0.05. Path analysis (PATH) analysis, which is among the structural equation modeling (SEM) methods, was used to determine the level of influence of students' critical reading levels on the Frequency of Use of Listening/ Watching Strategies. SEM is among the second generation data collection analysis techniques, which allows many dependent and independent variables to be analyzed together at once and to present them as a whole in a systematic and comprehensive way (Anderson & Gerbing, 1988; Bagozzi & Fornell, 1982).

Ethical Procedures

The ethical permission of the research was obtained with the decision of the Sivas Cumhuriyet Universitey Scientific Research and Publication Ethics Social and Human Sciences Committee, dated 07.09.2021 and numbered E-60263016-050.06.04-72456.

RESULTS

In this section, the findings obtained from the analyzes applied to determine whether the mean scores of secondary school students from CRS and LSUFS differ significantly in terms of different variables, and to determine the effect of students' critical reading levels on their listening/watching strategies usage levels are presented in this section. Below each table are explanations about the findings in the table.

The mean scores of the students from the scales, the standard deviation values of the mean scores, the maximum and minimum scores, and the internal consistency of the scales are given in Table 4 below.

Table 4. Descriptive statistics and cronbach alpha coefficients of scales and their sub-dimensions

Scales Subfactors	n	Min.	Maks.	$\bar{X}$	Item mean (1-5)	Item mean (100)	sd	Cronbach-Alfa
CRS	800	28	110	83.20	3.78	75.64	18.36	0.95
CMV	800	8	30	21.84	3.64	72.80	15.91	0.88
MLV	800	8	40	29.70	3.71	74.25	5.49	0.90
DLV	800	5	25	18.67	3.73	74.68	7.05	0.84
LSUFS	800	29	95	70.21	3.70	73.91	15.91	0.95

When Table 4 is examined; the total scores of CRS and LSUFS applied in this study and the mean scores of the students in the LSUFS sub-factors were determined to be moderate (p<3.80). Scale reliability was found to be high in both scale total and LSUFS sub-factors.

Whether the scores of secondary school students from CRS and LSUFS differ significantly according to the gender variable were analyzed using the independent groups t-test, and the findings are given in Table 5.

Table 5. Independent groups t-test results by gender variable

Scales	Gender	n	x	sd	t	df	*p*
CRS	Female	380	82.66	18.23	-.787	798	.431
	Male	420	83.69	18.47			
LSUFS	Female	380	69.11	15.97	-1.857	798	.064
	Male	420	71.20	15.80			
CLV	Female	380	21.77	5.52	-.325	798	.745
	Male	420	21.90	5.46			
MLV	Female	380	29.04	6.90	-2.525	798	.012*
	Male	420	30.30	7.13			
DLV	Female	380	18.29	4.76	-2.135	798	033*
	Male	420	19.00	4.62			

*p<.05

When Table 5 is examined; According to the gender variable, it is seen that there is no significant difference in the scores of secondary school students from the CRS. It was found that there was a statistically significant difference (p<.05) in favor of male students in the MLV and DLV factors in the scores that the students got from the LSUFS, but there was no significant difference in the total and CLV factors.

The findings of the ANOVA test applied to determine whether there is a significant difference according to the grade level variable in the scores of the participants included in the study from CRS and LSUFS are presented in Table 6.

Table 6. Grade level variable anova test results

Scales	Grade level	n	x	sd	Source of variance	df	F	*p*	Significant differences
CRS	5th grade	218	92.83	11.65	Between groups	3	71.938	.000*	*5-7, *5-8, *6-7, *6-8
	6th grade	180	90.07	14.27					
	7th grade	168	76.77	14.79	Within groups	796			
	8th grade	234	73.56	21.66	Total	799			
LSUFS	5th grade	218	78.69	10.31	Between groups	3	76.328	.000*	*5-7, *5-8, *6-7, *6-8
	6th grade	180	76.34	12.81					
	7th grade	168	64.73	13.48	Within groups	796			
	8th grade	234	61.52	17.85	Total	799			
CLV	5th grade	218	24.46	4.43	Between groups	3	71.138	.000*	*5-7, *5-8, *6-7, *6-8
	6th grade	180	24.20	4.55					
	7th grade	168	20.01	4.81	Within groups	796			
	8th grade	234	18.90	5.54	Total	799			

MLV	5th grade	218	33.57	5.00	Between groups	3	77.186	.000*	*5-7, *5-8, *6-7, *6-8
	6th grade	180	32.27	5.38					
	7th grade	168	27.38	6.07	Within groups	796			
	8th grade	234	25.79	7.74	Total	799			
DLV	5th grade	218	20.66	3.22	Between groups	3	38.023	.000*	*5-7, *5-8, *6-7, *6-8
	6th grade	180	19.88	4.39					
	7th grade	168	17.33	3.96	Within groups	796			
	8th grade	234	16.84	5.53	Total	799			

*p<.05

When Table 6 is examined, it is seen that there is a significant difference in the scores of the students from both scales (p<.05). It was determined that the significant difference was between the fifth and sixth grades and the seventh and eighth grades and was in favor of the lower grades.

The results of the ANOVA test applied to determine whether the scores of secondary school students from the scales differ significantly according to the mother education level variable are given in Table 7.

Table 7. Mother education variable ANOVA test results

Scales	Mother Education	n	x	sd	Source of variance	df	F	p	Significant differences
CRS	1.Primary S.	142	76.07	21.50	Between groups	3	13.257	.000*	*2-1, *3-1, *4-1, *4-2
	2.Middle S.	272	82.05	18.15					
	3.High S.	236	85.57	15.75	Within groups	796			
	4.University	150	88.31	17.12	Total	799			
LSUFS	1.Primary S.	142	64.52	17.62	Between groups	3	9.561	.000*	*2-1, *3-1, *4-1
	2.Middle S.	272	69.68	16.58					
	3.High S.	236	72.83	13.73	Within groups	796			
	4.University	150	72.43	14.77	Total	799			
CLV	1.Primary S.	142	20.18	6.44	Between groups	3	6.389	.000*	*2-1, *3-1, *4-1, *4-2
	2.Middle S.	272	21.79	5.51					
	3.High S.	236	22.34	4.83	Within groups	796			
	4.University	150	22.72	5.13	Total	799			
MLV	1.Primary S.	142	27.17	7.50	Between groups	3	9.074	.000*	*2-1, *3-1, *4-1, *4-2
	2.Middle S.	272	29.58	7.32					
	3.High S.	236	30.73	6.15	Within groups	796			
	4.University	150	30.69	6.86	Total	799			
DLV	1.Primary S.	142	17.17	4.86	Between groups	3	10.224	.000*	*3-1, *3-2, *4-1
	2.Middle S.	272	18.31	5.09					
	3.High S.	236	19.76	4.09	Within groups	796			
	4.University	150	19.01	4.26	Total	799			

*p<.05

Considering the findings in Table 7; It is concluded that the mean scores of the students from the CRS and LSUFS differ significantly in terms of the mother's educational status variable (p<.05). It is seen that this difference is in favor of the groups with higher maternal education.

The findings of the ANOVA test applied to determine whether the scores obtained from the scales of the students participating in the study differ significantly in terms of the father education level variable are given in Table 8 below.

Table 8. Father education variable ANOVA test results

Scales	Father Education	n	x	sd	Source of variance	df	F	p	Significant differences
CRS	1.Primary S.	98	72.63	21.90	Between groups	3	30.59	.000*	*2-1, *3-1, *3-2, *4-1, *4-2, *4-3
	2.Middle S.	190	78.31	19.01					
	3.High S.	266	84.10	17.12	Within groups	796			
	4.University	246	90.22	14.13	Total	799			
LSUFS	1.Primary S.	98	62.33	17.55	Between groups	3	24.762	.000*	*3-1, *3-2, *4-1, *4-2, *4-3
	2.Middle S.	190	65.84	16.86					
	3.High S.	266	71.20	14.87	Within groups	796			
	4.University	246	75.65	13.21	Total	799			
CLV	1.Primary S.	98	19.57	6.34	Between groups	3	16.147	.000*	*3-1, *3-2, *4-1, *4-2, *4-3
	2.Middle S.	190	20.88	5.66					
	3.High S.	266	21.80	5.21	Within groups	796			
	4.University	246	23.53	4.75	Total	799			
MLV	1.Primary S.	98	26.51	7.55	Between groups	3	24.315	.000*	*3-1, *4-1, *4-2, *4-3
	2.Middle S.	190	27.47	7.55					
	3.High S.	266	30.36	6.65	Within groups	796			
	4.University	246	31.98	5.82	Total	799			
DLV	1.Primary S.	98	16.24	4.96	Between groups	3	23.137	.000*	*3-1, *3-2, *4-1, *4-2, *4-3
	2.Middle S.	190	17.48	5.09					
	3.High S.	266	19.04	4.39	Within groups	796			
	4.University	246	20.15	3.97	Total	799			

*p<.05

When Table 8 is examined; It is seen that the scores of the secondary school students from the scales show a significant difference in terms of the father's education level variable (p<.05), and the scores of the students increase as the education level of the fathers with the highest score increases. In the Tukey analysis, which was applied to determine between which groups the significant difference was, it was determined that there was a significant difference in favor of university and high school groups and higher education levels.

Testing the Research Model

Path analysis was performed using the AMOS 23 package program. Regarding the CRS and LSUFS scales used in the research, it was determined that the scales met the necessary criteria for path analysis as a result of the CFA analyzes applied to the scores obtained in this study. Within the framework of these results, the Maximum Likelihood calculation method, which is among the SEM analysis methods, was preferred and the Covariance matrix was created (Gürbüz, 2019). In order to determine whether the critical reading levels of secondary school students have an effect on the frequency of using listening/watching strategies, a model was created and the model structure was tested. Considering the x2/sd<5 and other fit values of the variables in the model, it is seen that these values are within acceptable limits. In other words, it has been determined that the values related to the applied path analysis meet the accepted fit values for this model. This result shows that the research data are compatible with the established model. The model created for the path analysis regarding whether the critical reading levels of secondary school students have an effect on the frequency of using listening/watching strategies is presented in Figure 1 below.

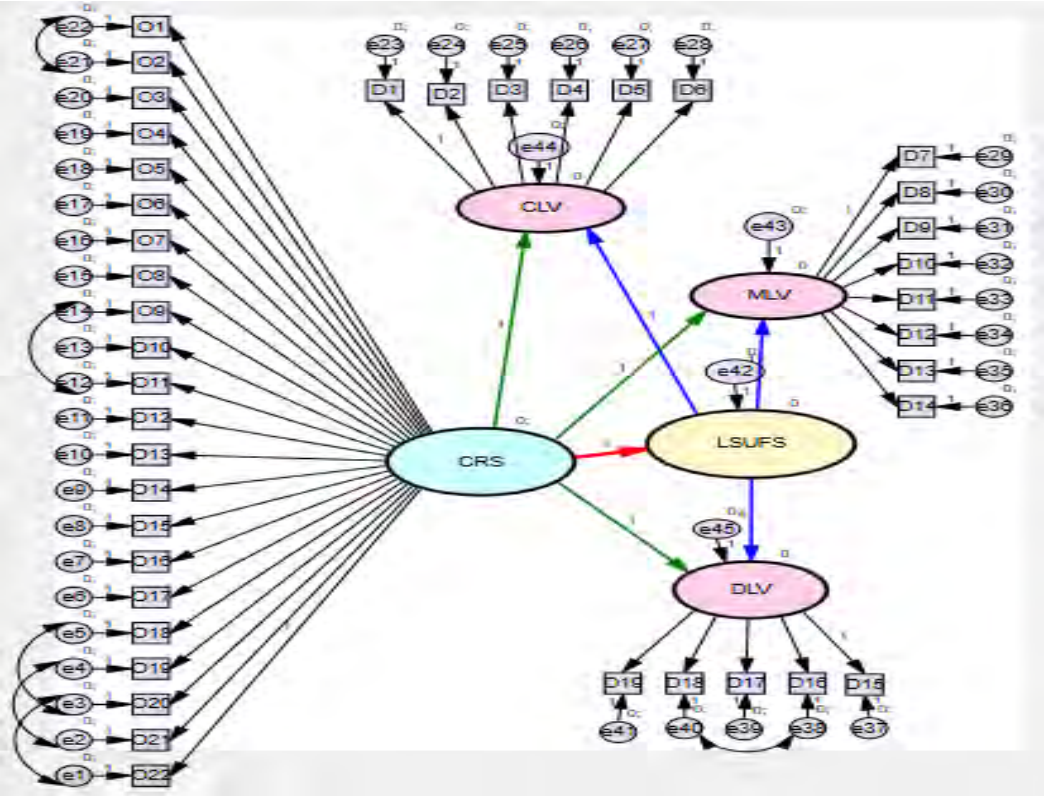

Figure 1. Path analysis diagram

When Figure 1 is examined; It seems that paths from CRS to LSUFS have been established. While creating the above model, items measuring similar things were combined in order to make the model better and healthier. Modifications were made with the covariance matrices established between the error terms that were found to measure the same thing. The items in which this process is performed are shown in the model above. The findings regarding the fit values of the model in the statistical outputs of the model in Figure 1 are presented in Table 9 below.

Table 9. Fit ındex values for path analysis

Model Fit Indices	Good Fit	Acceptable Compliance Values	Values
χ^2/sd	≤ 3	≤ 5	3.946
GFI	≥ 0.95	≥ 0.90	0.922
IFI	≥ 0.95	≥ 0.90	0.892
CFI	≥ 0.97	≥ 0.95	0.892
RMSEA	≤ 0.05	≤ 0.08	0.061

When the path analysis results in Table 9 are examined, the values related to the fit index of the established model; $\chi 2/sd=3.946$; GFI=0.922; IFI=0.892; CFI=0.892; It was calculated as RMSEA=0.061. It can be said that the values of the model developed within the framework of these values show an acceptable level of fit according to $\chi 2/sd$ and GFI, RMSEA fit indices. Therefore, it is seen that the result is in accordance with the criteria. However, the findings of the regression coefficients belonging to the relationship paths revealed in the path analysis that led to the formation of these results are important in terms of a healthier interpretation of the result of the research. It is important that the regression coefficients of the research differ statistically and that it is examined in connection with the hypotheses created. For this reason, the findings related to the regression coefficients obtained as a result of the path analysis related to the research are presented in Table 10.

Table 10. Structural model standardized path coefficients of the research model and analysis results

Relations	Path		Estimate(ß)	S.E	C.R	*p*	Result
CRS	→	LSUFS	0.948	0.012	15.212	0.001*	Accept
CRS	→	CLV	0.902	0.112	3.671	0.010*	Accept
CRS	→	MLV	0.949	0.125	3.872	0.000*	Accept
CRS	→	DLV	0.922	0.114	5.454	0.002*	Accept

When the findings regarding the path analysis in Table 10 are evaluated; it is seen that students' critical reading skills have a significant effect on the frequency of using listening/watching strategies (p<.05). It is seen that the model established with these results is confirmed. In the path analysis, it was determined that the "p" values in the correlations between the total score of CRS and LSUFS, and the factors of CLV, MLV and DLV were less than 0.05. This result reveals the existence of significant relationships between factor attributions and latent variables. In the results obtained as a result of the analysis; CRS positively affected the total score of LSUFS (ß=0.948; p<.05), positively affected the CLV factor (ß=0.902; p<.05), positively affected the MLV factor (ß=0.949; p<.05). .05), it was found to affect the DLV factor positively (ß=0.922; p<.05).

DISCUSSION AND CONCLUSION

In this part of the research, the findings obtained from the CRS and LSUFS scales applied to secondary school students will be discussed together with the studies in the literature.

According to the findings, there is no significant difference in the scores received by secondary school students from CRS by gender variable. In the findings of Aktaş's (2016) research, it was determined that gender did not lead to a significant difference in students' critical reading levels. In the studies conducted by Aybek and Aslan (2015), Can (2017), Gündüz (2015), it was found that the gender variable did not have a decisive effect on critical reading. In the study carried out by Arslan (2018) with secondary school students, a significant difference was found in favor of female students.

A statistically significant difference was found in favor of male students in the scores of LSUFS. In Arslan's (2017) study, it was found that female students had more problems in listening than male students. In the study of Demircan and Aydın (2018), a significant difference was found in favor of female students. When the studies on listening skill are examined, it is seen that different results have been reached. In the study conducted by Başkan and Deniz (2015), the listening competencies of the students with the subjects in which they were interested were investigated. It was found that female students performed more successful listening than male students on topics that interested them.

Another finding obtained in the study is that students' grade levels significantly affected their critical reading skills. It was found that as the grade level increased, the students' critical reading scores decreased. Students' critical reading skills are expected to improve in parallel with their grade level, as are many learning-related skills. However, studies conducted on the secondary school level reveal that the reality does not match expectations. When Arslan's (2018) research is examined, it is seen that low-level class levels have a higher average score compared to higher-level class levels, which is in parallel with the findings of this study. It was found that these results were obtained in studies on different high-level competencies at the secondary school level (Arslan, 2017; Koç & Arslan, 2015). Studies that were not compatible with this study were also found in the literature. Aybek and Aslan (2015) found in their research that grade level has no effect on critical reading skills.

The average scores of the students from the listening/watching scale were found to decrease as the grade level increased. In the research findings of Demircan and Aydın (2018), it is seen that there is a significant difference, and the scores of the students decreased as the grade level increased. It is seen that both scales show results that support each other. Eggenberger (2021) argues that secondary

school students' enter adolescence, which negatively affects their success at school. It should be taken into account that this period is intertwined with adolescence and that the possible negative effects of adolescence are also seen. When we look at the studies on development, it is seen that the problems experienced in the process of identity formation in adolescence, the severity of emotional changes, and the individuals' focus on themselves have great effects. In adolescence, when individuals declare their personal independence, they see their parents and teachers as authority figures. Moreover, it is argued that being influenced by peers rather than family and school leads to a decrease in interest and attention for learning (Eggenberger, 2021; Freud, 1977). Başkan and Deniz (2015) revealed that as the grade level increased, the level of stress experienced by the students increased, which might be another reason for the decrease in the listening skills of the students as the high school entrance exams approached.

The mean scores of secondary school students related to CRS were found to differ significantly by the parents' educational status variable. It is seen that this difference is in favor of those whose parents have a higher level of education. In the results of the study conducted by Arslan (2018), a significant difference is observed by the educational status of the parents, in parallel with the findings of this study, and the scores of the students were found to be in parallel with the education level of their parents. There are also studies in the literature in which parents' education level does not have a determining effect on critical reading. In the studies conducted by Sadi and Bilgin (2008) and Gündüz (2015), it was concluded that parents' education level did not have a determining effect on students' critical reading scores. In the literature, conflicting results are found regarding the effect of parents' education level on students' critical reading skills.

In the study, it was concluded that the average scores of the participants from LSUFS differed significantly by the parents' education status variable. It was found that the higher the parental education level was, the higher the students' scores on listening/watching skills were. In the study conducted by Demircan and Aydın (2018), it was concluded that the high educational level of parents positively affected the students' listening skills, which is in line with the findings of this study. There are many studies in the literature supporting the finding that the education level of parents has an effect on students' listening skills (Arslan, 2017; Coşkun & Önkaş, 2004). In the scores obtained from both scales, it is seen that the level of parents' education level leads to a significant difference in the scores of the students. In this sense, it can be argued that parents with higher education levels have a positive effect on their children's learning processes. Öksüzler and Sürekçi (2010) found that high level of education of families positively affected the academic achievement of students. Hortaçsu (1995) states that it is important for families to be well equipped in order to support their children's education in this regard. Hortaçsu argues that it is important for families to provide guidance to students in learning the subjects that they could not fully understand at school, and to help them in the learning process.

In the findings of the path analysis established in the research, it was seen that the fit index values of the model were at an acceptable level. Therefore, it is seen that the model represents a result in accordance with the criteria. The regression coefficients of the relationship paths revealed in the path analysis are the source of the results. The regression coefficients and the findings related to these coefficients are important for a correct interpretation of the research results. For this, the regression coefficients obtained from the path analysis of the research have been examined. When the findings are analyzed, it is seen that students' critical reading skills have a significant effect on the frequency of using listening/watching strategies. It is seen that the model established with these results is confirmed. In the path analysis, it was determined that students' critical reading skills have a positive effect on the frequency of using listening/watching strategies. According to these findings, it can be anticipated that students' critical reading skills positively affect their use of listening/watching strategies, and therefore critical reading skill is an important factor. In the studies conducted by Aydın (2017) and Ünal (2006), it has been found that critical reading has a significant effect on reading comprehension, and Epçaçan's (2012) research found a significant effect on attitudes towards reading. It is seen that the effect of critical reading on different competencies as well as the effect of using it in different classes has also been examined in the literature. It has been found that preparing the social

studies curriculum in accordance with critical reading has a positive effect on the students' critical thinking skills. Çam (2006) found a significant relationship between students' critical reading skills and their academic achievements in Turkish lessons.

Carr (1988) argues that critical reading skill is the basis of other higher-level skills. In this context, it is important for educators to help students acquire critical reading skills. Fleming and Weber (1980) emphasize the necessity of developing the necessary educational materials, methods, and techniques for students to acquire critical reading skills.

Recommendations

Within the framework of the findings obtained from the research, the following suggestions are made to curriculum developers, researchers, and other education stakeholders:

1. Critical reading skill is an activity-based skill, and in order to develop this skill in students, first of all, pre-service and in-service training should be offered to improve teachers' critical reading skills.

2. Quantitative and qualitative studies should be analyzed together in order to reveal more concretely the reasons for the decrease in critical reading skills and the frequency of using listening/watching strategies according to grade level.

3. It is considered that studies examining the interactions between critical reading and the frequency of using listening/watching strategies for different courses will support the literature.

4. The effect of critical reading skill on students' frequency of using listening/watching strategies should be investigated at different grade levels.

Statement of Responsibility

The study was conducted and reported by the corresponding author

Conflicts of Interest

The authors of this article declare that there is not conflict of interest.

REFERENCES

Abdolrezapour, P., & Ghanbari, N. (2021). Enhancing learning potential score in EFL listening comprehension and self-regulation through self-regulated dynamic assessment procedures. *Language Testing in Asia*, *11*(1), 1-19. https://doi.org/10.1186/s40468-021-00126-5

Aghajani, M., & Gholamrezapour, E. (2019). Critical thinking skills, critical reading and foreign language reading anxiety in Iran context. *International Journal of Instruction*, *12*(3), 219-238. https://doi.org/10.29333/iji.2019.12414a

Aktaş, B. Ç. (2016). Examining critical reading self efficacy perceptions and reflective thinking tendencies of students in pedagogic formation program. *Electronic Journal of Social Sciences, 15*(59), 1186-120. https://doi.org/10.17755/esosder.76856

Allen, L. K., & McNamara, D. S. (2020). Defining deep reading comprehension for diverse readers. In *Handbook of reading research, Volume V* (pp. 261-276). Routledge.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411. https://doi.org/10.1037/0033-2909.103.3.411

Arslan, A. (2017). Investigation of secondary school students' listening anxiety and academic self-efficacy beliefs in terms of various variables. *International e-Journal of Educational Studies*, *1*(1), 12-31.

Arslan, A. (2018, October). Reading strategies' metacognitive awareness and critical reading skills of secondary. *6th International Education Programs and Instruction Congress,* Kars.

Arslan, A. (2021). *The effect of cooperative teaching method on academic achievement, learning motivation, attitude and permanent in turkish teaching program.* (Unpublished PhD thesis). Atatürk Üniversity, Institute of Education Sciences, Erzurum.

Aybek, B., & Aslan, S. (2015). Investigation of prospective teachers' critical reading self efficacy in terms of different variables. *International Journal of Turkish Literature, Culture and Education, 4*(4), 1672-1683.

Aydın, R. I. (2017). *Impact of critical reading and argumentative reading methods on reading comprehension level of 6th grade students (sample of Muş province).* (Unpublished master's thesis). İnönü Üniversity Institute of Education Sciences, Malatya.

Bagozzi, R. P., & Fornell, C. (1982). Theoretical concepts, measurement, and meaning. In C. Fornell (Ed.), *A second generation of mulivariate analysis*, (pp. 5-23). New York: Praeger

Başkan, A., & Deniz, E. (2015). In-class listening problems of secondary school students (Malatya province case). *Turkish Studies*, *10*(7), 179-196. http://dx.doi.org/10.7827/TurkishStudies.8014

Benesch, S. (1993). Critical thinking: A learning process for democracy. *TESOL Quarterly*, *27*(3*)*, 545-548. https://doi.org/10.2307/3587485

Bosley, L. (2008). I don't teach reading: Critical reading instruction in composition courses. *Literacy Research and Instruction*, *47*(4*),* 285-308. https://doi.org/10.1080/19388070802332861

Bozorgian, H. (2012). *Listening skill requires a further look into second/foreign language learning*. International Scholarly Research Notices. https://doi.org/10.5402/2012/810129

Can, R. (2017). The relations between secondary students' skills to find implied meaning and their perceptions of critical reading self-efficiency. *International Journal of Eurasia Social Sciences*, *8*(26), 232-243.

Carr, K. S. (1988). How can we teach critical thinking? *Childhood Education*, *65*(2), 69-73. https://doi.org/10.1080/00094056.1988.10522400

Çam, B. (2006). *The relationship between primary school students' visual reading levels and their reading comprehension, critical reading and academic achievement in Turkish lessons.* (Unpublished master's thesis). Osmangazi University Social Sciences Institute, Eskişehir.

Casbergue, R. M., & Harris, K. (1996). Listening and literacy: Audiobooks in the reading program. *Reading Horizons: A Journal of Literacy and Language Arts, 37*(1), 48-59.

Cervetti, G., Pardales, M. J., & Damico, J. S. (2001). A tale of differences: Comparing the traditions, perspectives, and educational goals of critical reading and critical literacy. *Reading Online*, *4*(9), 80-90.

Collins, N. D. (1993). *Teaching critical reading through literature*. *ERIC*, Clearinghouse on Reading, English, and Communication. Retrieved 11/14/2021 from https://www.vtaide.com/png/ERIC/Critical-Read.htm.

Coşkun, M. V., & Önkaş, N. A. (2004). *İlköğretimden orta öğretime geçişte Türkçenin önemi. [Importance of Turkish in the transition from primary to secondary education]*. Secondary Education Restructuring Symposium. Ankara: Ministry of National Education Publications.

Course, S. (2014). Critical reading in EFL in Turkish high school context. *International Journal of Language Academy*, *2*(3), 133-156.

Dalton, F. D. (2009, October). *Critical reading-an evaluation of a teaching.* 39th ASEE/IEEE Frontiers in Education Conference, San Antonio, Texas.

Demircan, U., & Aydın, İ. S. (2019). Evaluation of the secondary school student's listening/watching selfefficiency according to various factors. *Kastamonu Education Journal*, *27*(4), 1517-1527. https://doi.org/10.24106/kefdergi.3119

Demirel, Ö. (2004). *Türkçe öğretimi: Türkçe ve sınıf öğretmenleri için [Teaching Turkish: for Turkish and classroom teachers]*. (6th edition). Ankara: Pegem A Publications.

Doğan, B., & Erdem, İ. (2017). Validity-reliability study for the usage frequency scale of listening/viewing strategies in middle school students. *E-International Journal of Educational Research*, *8*(1), 64-81. https://doi.org/10.19160/5000204360

Dolean, D. D., Lervåg, A., Visu-Petra, L., & Melby-Lervåg, M. (2021). Language skills, and not executive functions, predict the development of reading comprehension of early readers: evidence from an orthographically transparent language. *Reading and Writing*, *34*(6), 1491-1512. https://doi.org/10.1007/s11145-020-10107-4

Eggenberger, A. L. B. (2021). Active listening skills as predictors of success in community college students. *Community College Journal of Research and Practice*, *45*(5), 324-333. https://doi.org/10.1080/10668926.2019.1706667

Ennis, R. H. (1993). Critical thinking assessment. *Theory into Practice*, *32*(3), 179-186. https://doi.org/10.1080/00405849309543594

Epçaçan, C. (2012). Relationship between critical reading skills of secondary school students and their attıtudes toward reading. *Electronic Turkish Studies*, *7*(4), 1711-1726.

Feyten, C. M. (1991). The power of listening ability: An overlooked dimension in language acquisition. *The Modern Language Journal, 75*(2), 173-180. https://doi.org/10.2307/328825

Fisher, D., & McDonald, N. (2001). The intesection between music and early literacy instruction: Listening to literacy! *Reading Improvement, 38*(3), 106-116.

Fleming, D. B., & Weber, L. J. (1980). Recognizing point of view: a critical reading skill in the social studies. *Social Education, 44*(2), 153-156.

Freud, A. (1974). *The writings of Anna Freud: I. introduction to psychoanalysis: Lectures for child analysts and teachers, 1922-1935*. International Universities Press.

Gündüz, B. (2015). *A study on university freshmen's reading habits and critical reading skills: A case study.* (Unpublished master's thesis). İhsan Doğramacı Bilkent Üniversity Institute of Education Sciences, Ankara.

Güneş, G. (2019). *The effect of critical thinking based listening / monitoring training on critical listening/monitoring* (Unpublished master's thesis). Yıldız Technical University Social Sciences Institute, İstanbul.

Güneş, F. (2011). *Uygulamalı okuma yazma öğretimi [Applied literacy teaching]*. (5th edition). Ankara: Ocak Publications.

Gürbüz, S. (2019). *AMOS ile yapısal eşitlik modellemesi [Structural equation modeling with AMOS]*. Ankara: Seçkin Publications.

Halpern, D. F. (2003). *Thought and knowledge an introduction to critical thinking.* (4th edition). London: Lawrence Erlbaum Associates Publisher.

Hampleman, R. S. (1958). Comparison of listening and reading comprehension ability of fourth and sixth grade pupils. *Elementary English, 35*(1), 49-53. https://www.jstor.org/stable/41384692

Hoffman, J. V. (1992). Critical reading/thinking across the curriculum: Using i-charts to support learning. *Language Arts*, *69*(2), 121-127. https://www.jstor.org/stable/41411571

Hortaçsu, N. (1995). Parents' education levels', parents' beliefs, and child outcomes. *The Journal of Gnetic Psychology, 156*(3), 373-383. https://doi.org/10.1080/00221325.1995.9914830

Kaya, D. (2018). Dinleme eğitimi [Listening training]. M. Yılmaz (Ed.). *Yeni gelişmeler ışığında Türkçe öğretimi* içinde [In *the light of new developments in Turkish teaching*]. (2nd edition, pp.17-44). Ankara: PegemA Publications.

Mackay, I. (1997). *Listening skill* (Trans. A. Bora and O. Cankoçak). Ankara: İlkkaynak Culture and Art Products.

Mead, N. A., & Rubin, D. L. (1985). Assessing listening and speaking skills. *ERIC*, Digest, ED 263626.

Ministry of National Education (2006). *Primary education Turkish lesson (6th-8th grades) curriculum*. Ankara: Ministry of National Education Publications.

Ministry of National Education (2018). *Turkish lesson curriculum*. Ankara: Ministry of National Education Publications.

Ministry of National Education (2019). *Turkish lesson curriculum*. Ankara: Ministry of National Education Publications.

Moore, B. C. (2001). Dead regions in the cochlea: Diagnosis, perceptual consequences, and implications for the fitting of hearing aids. *Trends in Amplification*, *5*(1), 1-34. https://doi.org/10.1177/108471380100500102

Nosich, G. M. (2015). *Critical thinking and disciplines critical thinking guide* (Trans. B. Aybek). Ankara: Anı Publications.

Özbay, M., & Melanlıoğlu, D. (2012). An evaluation of Turkish education programs in terms of listening skills. *Turkish Studies*, *7*(1), 87-97.

Öksüzler, O., & Sürekçi, D. (2010). Determinants of success in Turkish primary schools: An ordered logit approach. *Finance Political & Economic Reviews, 47*(543), 93-103.

Özensoy, A. U. (2011). *The effect of social studies course organized according to critical reading on critical thinking skills.* (Unpublished PhD thesis). Gazi Üniversity, Institute of Education Sciences, Ankara.

Purdy, M. (1997). What is listening? In M., Purdy, & D. Borisoff, (EDS). *Listening in everyday life: A personal and professional approach* (2nd edition, pp.1–20). USA: University Press of America.

Robertson, A. K. (2002). *Effective listening*. (Trans. S. Yarmalı). İstanbul: Hayat Publications.

Ruggerio, V. R. (2011). *Becoming a critical thinker.* (9th edition). Boston: Houghton-Mifflin Co.

Sadioğlu, Ö., & Bilgin, A. (2008). The critical reading skills of primary school students according to gender differences and educational level of their fathers and mothers. *Elementary Education Online*, *7*(3).

Sadiku, L. M. (2015). The importance of four skills reading, speaking, writing, listening in a lesson hour. *European Journal of Language and Literature, 1*(1), 29-31. https://doi.org/10.26417/ejls.v1i1.p29-31

Sever, S. (2004). *Türkçe öğretimi ve tam öğrenme [Turkish teaching and full learning]*. (4th edition). Ankara: Anı Publications.

Şad, S. N., & Nalçacı, Ö. İ. (2015). Prospective teachers' perceived competencies about ıntegrating ınformation and communication technologies into education. *Mersin University Journal of the Faculty of Education*, *11*(1), 177-197.

Şahin, C. (2015). Effect of short films on secondary school students' listening skill development. *Journal of Language and Literature Education, 10,* 66-79.

Temur, T. (2001). *Dinleme becerisi-konu alanı ders kitabı inceleme kılavuzu Türkçe 1–8 [Listening skill-subject area textbook review guide Turkish 1–8]*. Ankara: Nobel Publications.

Ünal, E. (2006). *The relation between primary school students critical reading skills and ability of reading understanding and their attitudes towards reading.* (Unpublished master's thesis). Eskişehir Osmangazi Üniversity Social Sciences Institute, Eskişehir.

Ünalan, Ş. (2010). *Türkçe öğretimi [Turkish teaching]*. (3th edition). Ankara: Nobel Publications.

Vandergrift, L. (2004). Listening to learn or learning to listen? *Annual Review of Applied Linguistics*, *24*, 3-25. https://doi.org/10.1017/S0267190504000017

Willingham, D. T. (2020). Ask the cognitive scientist: How can educators teach critical thinking? *American Educator*, *44*(3), 41.

Winter, G. (2018). How important is reading critically? *British Journal of Midwifery*, *26*(3), 196-196. https://doi.org/10.12968/bjom.2018.26.3.196

Wolvin, A., & Coakley, C. G. (1996). *Listening.* (5th edition). Mc Graw Hill, Boston.