

The Effect of Reciprocal and Direct Teaching Approaches on Summarizing Skill

Izzet Gorgen

*Department of Educational Sciences, Education Faculty, University of Mugla Sitki Kocman,
Mugla, Turkey 48000
Telephone: 0(90) 252 211 18 28, E-mail: igorgen@mu.edu.tr*

KEYWORDS Student. School. Direct Instruction. Reciprocal Teaching. Summarizing Rules

ABSTRACT The purpose of this paper is to investigate whether the “reciprocal teaching” approach or the “direct instruction” approach is more effective in teaching summarizing rules. Moreover, the paper examines the summarizing rules that are difficult to apply. The study group consists of ninth grade high school students. The students’ summaries were scored using the Summary Scoring Key (SSK). The students’ summaries were examined and the application percentages of the rules were calculated in order to determine the summarization rules, which are difficult to use. At the end of the present paper, it is found that reciprocal teaching and direct instruction approaches have a similar effect on teaching summarizing rules. The rule “delete the unimportant information” was successfully applied on students in both, the experimental and control groups. The rule “delete the repeated information” was the most difficult rule to learn for both groups.

INTRODUCTION

The extent to which summarizing rules affect the summarizing skills of the students was investigated in the current paper. The current paper examined whether the “reciprocal teaching” approach or the “direct instruction” approach was more effective in teaching the summarizing rules. Most school learning depends on written materials; hence, reading comprehension skills are very important. Reading comprehension means students are able to derive the exact and correct meaning from a text suitable for their level. Studies on comprehension show that some techniques can help students understand what they have read and these techniques are teachable (Pressley et al. 1989). One of these techniques is summarizing what is read.

Summarizing and Its Teaching

The skill of summarizing is quite important for understanding and remembering any text. Summarizing means forming a structure to comprise the text and representing the important sentence structures in it. Superfluous and unimportant points are isolated from the general structure and a macro structure constituting the essence appears. The macro structure should be seen as the basic frame of the meaning in the text. Moreover, summarizing helps students think about what they have learnt, write logically and

comprehensibly, and explain what they have learnt in their own words. Students who have acquired summarizing skills greatly enhanced reading comprehension (Brown et al. 1983; Cikrikci 2008; Erdem 2012; Karatay and Okur 2012).

Summarizing is a process, which requires conforming to certain rules. Brown and Day (1983) analyzed texts by using the summarizing model proposed by van Dijk and Kintsch (1978). They determined six summarizing rules as a result of this analysis (cited by Hahn and Garner 1985). These rules were presented to the students in the present paper as summarizing rules. These rules are the following: shortening what is given as lists, deleting repeated sentences and including only one of them in the summary, deleting unimportant sentences, choosing important knowledge and including it in the summary, deleting unrelated sentences, finding the topic sentences and including them in the summary, and forming topic sentences if none exist. These rules used in forming the large-scale structure of a text were used in the summary-writing processes and became the subject of various studies (Cakir 1995; Cikrikci 2008; Karatay and Okur 2012).

A great deal of research has been conducted on teaching learning strategies. Two basic approaches have been adopted in this research. These are “direct instruction” and “reciprocal teaching” (Senemoglu 2013). In the present paper, the direct instruction and reciprocal teaching approaches were used, summarizing rules

were taught to the children, and the paper intended to determine which of these approaches was more effective.

Direct Instruction

The direct instruction approach in strategy teaching is teacher-centered. The teacher is active in arranging the activities to be presented to the students and in gradually presenting them. This does not mean that students will never take part in the process. In the direct instruction approach, rules and generalizations are first presented, and then these rules and generalizations are supported with the examples given later. This approach contains techniques such as lecturing, showing, completing exercises, repeating and didactic questioning (Taspinar and Atici 2002). Teachers can generally use this approach for presenting learning strategies to their students (Senemoglu 2013). The direct teaching method contributes to improving the students' ability to summarize informative texts (Kusdemir and Gunes 2014). Direct teaching principles are given in the following sections (Rinehart et al. 1986): exact explanations, formalizing, feedback practice, separating complex skills into parts, and lessons made of notes.

Reciprocal Teaching

The main aim of reciprocal teaching is to help (enable) students develop their cognitive strategies and reading comprehension skills (Rosenshine and Meister 1994). Reciprocal teaching is used in teaching learning strategies as an alternative to direct instruction. Reciprocal teaching is an instructional technique related to research and development propounded by Palinscar and Brown (Seymour and Osanab 2003). Reciprocal teaching starts with a teacher's carrying out an activity and then including students to perform the activity with the teacher. Students gradually take more responsibility and educate each other (Schunk 2009). Reciprocal teaching, with an adult model guiding the student to interact with the text in more sophisticated ways, led to a significant improvement in the quality of the summaries and questions (Palinscar and Brown 1984). The reciprocal teaching approach requires the teacher to be a model rather than to make a presentation in the teaching-learning process (Senemoglu 2013). Then, students are encouraged to

repeat in groups what their teacher did. The reciprocal teaching strategy guides groups to share in monitoring their own comprehension through questioning, clarifying, summarizing and predicting (Raslie et al. 2015).

Aim of This Paper

The purpose of this paper is to investigate which teaching approach is more effective and which summarizing rules are hard to use. Thus, it is intended to contribute to the learning-teaching process to be organized to improve summarizing skills and indirectly reading comprehension. Based on the findings of the present paper, data concerning the teaching of learning strategies will be presented to teachers. To that end, answers to the following questions were sought:

1. Does teaching summarizing rules with either the reciprocal teaching and direct instruction approaches make a meaningful difference between the students' summarizing skill levels?
2. In the application of which summarizing rules prove difficult for students taught to summarize through reciprocal and direct instruction approaches?

METHODOLOGY

Research Design

A post-test experimental design with an equivalent control group was used in the research.

Participants

Research was conducted in a high school. The randomly chosen ninth grade's class A was appointed as the control group (direct instruction), and class C was appointed as the experimental group (reciprocal teaching). A total of 59 students participated in the study; 32 from class A and 27 from class C.

Data Collection Instruments

Working Material

The informative, natural text titled "Maslow's Hierarchy of Needs" was chosen for the students

to summarize (Sahin 1983). The text consisted of 42 sentences and 526 words.

Reading Comprehension Test

In the present paper, reading comprehension skill plays an important role. Therefore, a reading comprehension test was first administered in order to determine the equivalence of the experimental and control groups from the viewpoint of their "reading comprehension" skill levels before the research was conducted. The content validity of the prepared test was established by seeking the opinions of Turkish language experts. Necessary corrections were made on the questions and their options, and questions that did not measure reading comprehension skills or were found to be unsuitable for the students' level were left out of the test. After necessary revisions, the test consisting of 38 multiple-choice questions was ready to be administered to 49 students not in the study group for piloting purposes. Following this, item analyses were conducted. Items with a discrimination power index of 0.31 and above and a difficulty index between 0.27 and 0.84 were selected to be included in the final form of the test (Turgut 1985). The final form of the test included 31 items. The reliability coefficient of the test calculated from the KR-20 formula was found to be 0.95. The values related to the reading comprehension test scores of the groups are presented in Table 1.

As seen in Table 1, the reading comprehension test scores were $M = 24.0$ in the experimental group and $M = 24.3$ in the control group. Whether the difference between these means is meaningful or not was analyzed with a t-test. The groups can be said to be equivalent in terms of reading comprehension skills according to the results of the analysis.

Summary Scoring Key (SSK)

SSK was developed to score the students' summaries. Since the natural text was used in the research, use of all of the summarizing rules was

not possible in the summarizing process. The following stages were pursued in the development of SSK. The researcher and two education curriculum and instruction experts made a summary of the text using the summarizing rules. Which rule would be used where (in which paragraph), how many times it would be used and what kind of a summary would come out were determined. Thus, the text was analyzed according to text summarization rules. According to the text analysis results, the rule "deleting repeated information" could be used ten times, the rule "deleting unimportant information" could be used six times, the rule "deleting inappropriate information" could be used two times, the rule "choosing important information" could be used seven times, and the rule "choosing the main idea sentence" could be used seven times in the text. One point was given to the correct use of every rule, and no points were given to any unused rules. For example, when the rule "deleting unimportant information" was applied in the text exactly, the total points that could be given for the application of this rule were calculated to be six points. Thus, the highest summary score that can be given as a result of correct application of all rules was determined to be 32 points. Within the context of the standards obtained in this way, the SSK was developed. The students' summaries were read and scored under the consideration of the standards in this key. In scoring, sentences in the students' summaries comprising the expressions in the text in terms of meaning were also considered.

Data Analysis

Students' summaries were scored according to SSK first. Summaries of 10 students chosen randomly from the experimental and control groups in order to establish the reliability of the summary points were scored according to SSK by an independent reader (expert in curriculum and instruction). Consistency between the raters was observed. Arithmetic means of the students' summaries for experimental and control

Table 1: The results of the descriptive statistics and the independent t-test about the reading comprehension skill scores of the groups

Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>T</i>	<i>df</i>	<i>p</i>
Control	33	24.3	2.9	-0.44	63	0.6
Experimental	32	24.0	3.1			

$P < 0.05$

groups were calculated. Both t-test and percentage values were used in the data analysis. Students' summaries were examined and the application percentages of the rules were calculated in order to determine which summarization rules are difficult to use.

Procedure

The summarizing rules arranged according to the reciprocal teaching approach were taught to the experimental group students in accordance with the plan summarized below. Steps determined by Senemoglu (2013) were used in the teaching process.

Step 1: The teacher first shows the students how to form the summary of a text thinking aloud (preparation - rules - reviewing).

Step 2: Then, the teacher explains how and what kind of questions will be asked to find the unrelated and unimportant sentences or to find the main idea and the important information of the text while thinking aloud and he or she asks sample questions. The following are the sample questions: Which sentences in the text are repeated? What information in the text is effective in communicating the main idea?

Step 3: The summarizing rules, which are not understood exactly and which need to be explained are determined by the teacher thinking aloud, asking questions to him or herself. The teacher makes explanations as a model at this step.

Step 4: The teacher divides the students into pairs. This time, the students take the role of the teacher and they become models in the demonstration of summary-forming rules and their application to each other. A sample text to study is given to each group. The students are asked to form the summary of this text by thinking aloud. The group members are asked to exchange and criticize (evaluate) the summaries they make. The responsibility passes from the teacher to the student in teaching the summarization.

As for the control group, summarization rules were taught using the direct instruction (preparation - rules - reviewing) method. The direct instruction applied according to the application steps below. The teacher conducted the activities given in each step through lecturing and demonstration.

Step 1: Attracting attention and informing about the target: The teacher says to the stu-

dents, *"Today, we are going to learn the summarizing rules and their application in the lesson. If we learn this skill, it provides a support for us in understanding, summarizing, and synthesizing complex views"* and attracts their attention towards summarizing.

Step 2: Looking at the prior knowledge: Students are asked questions to remind them about the basic skills such as finding the main idea and highlighting what they learnt during previous lessons.

Step 3: Presenting the stimulant materials: The teacher reflects the sample text to the class on a projector and distributes it to the students. Summarizing rules are shown with verbal explanations and demonstrations. The students are controlled in terms of whether they follow the application of the rules on the distributed text or not.

Step 4: Enabling the students to do exercises on sample texts by themselves: A new text is distributed to the students. They are asked to summarize this text on their own with guidance offered by the teacher.

Step 5: Evaluating the performance and giving feedback: The teacher controls the students' texts. The problems they face when they make summaries are determined. Missing and incorrect points are marked. Cues are given by the teacher for corrections. The students are asked to correct their summaries.

Teaching the summarizing rules took three lesson hours in both groups. The text titled "Maslow's Hierarchy of Needs" was distributed to the students of both groups just after summarizing was taught. Forty minutes were given to the participants, who were asked to make a summary of this text. At the end of the allotted time, the summaries were collected and scored.

RESULTS

The Results Regarding Summary Scores

The first question whose answer was sought was expressed as "Does teaching summarizing with the reciprocal teaching and direct instruction approaches make a meaningful difference between the summary scores of the students?"

In the analysis done for this purpose, the mean score of the experimental students was found to be,

$M = 16.5$. The lowest summary score was 9 and the highest summary score was 21 in the

experimental group. The summary mean score of the control group students was

$M = 16.8$. The lowest summary score was 8 and the highest summary score was 23 in the control group. An independent t-test was applied in order to determine a meaningful difference between the mean scores of the both groups. The results of the t-test are presented in Table 2.

As it is seen in Table 2, there is no significant difference between the summary mean scores of the experimental group (reciprocal teaching) and the control group (direct instruction) students. According to this result, students learning summarizing rules with the reciprocal teaching approach and students learning with the direct instruction approach are similar in terms of summarizing skill levels. Hence, it can be concluded that the reciprocal teaching and direct instruction approaches had a similar effect on teaching the summarizing rules.

The Results Regarding Rates of the Use of Summarizing Rules

The other question whose answer was sought after in the current paper was: "Which summarizing rules are used at which rate?"

Thus, the summarizing rule, which is difficult to teach, will be determined. Summaries of the students in the experimental and control groups were examined and the percentages of the application of the rules were calculated in order to answer this question. Table 3 shows the rates of use of the summarizing rules in the experimental and control groups.

As seen in Table 3, the rules which were applied most successfully are the rules from the

deleting group "delete unimportant information" and "delete unrelated information" in the summaries of both the experimental and control group. The rule "delete the sentences containing unimportant information" was applied at a rate of seventy-one percent in the experimental group's summaries and at a rate of seventy-five percent in the control group's summaries. The rule "delete unrelated sentences" was applied at a rate of sixty-five percent in the experimental group's summaries and at a rate of seventy-five percent in the control group's summaries. It can be said that these two rules are the rules, which are learnt best in both groups.

The rule "delete the repeated information, take only one of them to the summary" from the "deleting" group could be used correctly at a rate of only forty percent in the summaries of the experimental and the control group. The rate of not using this rule in the summaries of both of the groups is sixty percent. It can be said that this rule is the most difficult to learn for both of the groups.

The rule "choosing the important information" in the "choosing" rules group was applied correctly at a rate of forty-one percent in the summaries of the experimental group and it was applied at a rate of forty-four percent in the summaries of the control group. "Take the sentences containing the important information" is the second most difficult rule to apply among all of the rules. The rule "choose the main idea sentence" was applied at a rate of fifty-five percent in the summaries of the experimental group and at a rate of fifty-two percent in the summaries of the control group. The rate of application of this rule

Table 2: Descriptive statistics and independent t-test results about the summary scores of the groups

Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>T</i>	<i>df</i>	<i>p</i>
Control	32	16.8	3.3	-0.22	57	0.7
Experimental	27	16.5	3.1			

$P < 0.05$

Table 3: Rates of the use of summarizing rules

Groups	Delete the repeated information %	Delete the unimportant information %	Delete the unrelated information	Choose the important information %	Choose the main idea sentence %
Experimental	40	71	65	41	55
Control	40	75	75	44	52

in the summaries of both of the groups is above fifty percent.

DISCUSSION

According to the results of the paper, no significant difference could be found between the summary scores of the students learning the summarizing rules with reciprocal teaching and direct instruction methods. Both the reciprocal and direct teaching approaches are designed to improve the reading ability, one of which is also summarizing (Dogan 2013). This result can be interpreted as when the absolute success level of the students' summaries is regarded, both the experimental and control group students had summarizing performances at a rate of about fifty percent. When the summaries of the students of both groups are examined, some paragraphs remaining included at all may be the cause of this result. Because the summarizing rules are not used in these paragraphs, no points were given to the students' summaries from these paragraphs. This situation caused the summary points to decrease. Generally, the reason for the paragraph not being summarized is that the last paragraph of the text may be informative text used in the research is a long text (526 words). According to Hahn and Garner (1985), the ideal informative text to use to teach summarizing rules should be between 200 and 400 words.

Time spent on teaching summarizing rules was short (three class hours), so this may have led to a difference between the summarizing scores of the groups. This amount of time was not adequate to teach the summarizing rules explained in the findings in both groups. Previous research (Anderson and Armbruster 1984; Brown and Palincsar 1985, cited: Senemoglu 2013; Presley et al. 1989) indicates that teaching summarizing takes time. According to Eyup et al. (2012), the summarizing process may also require too much application. Moreover, it is indicated that teaching short-term strategy is not effective (Bretzing et al. 1987; Cakir 1995).

Secondly, the current paper intended to determine which summarizing rule is difficult to apply. When the students' summaries were examined, the rules "take only one of the repeated information into the summary and exclude the other one" and "take the sentences containing important information into the summary" were found to have the lowest rates of use. This can

be explained this way: When the students' summaries in both groups were examined, it was seen that the rule "take only one of the repeated information into the summary, exclude the other one" was applied incorrectly. This mistake occurred because both sentences that repeated each other were taken into the summary. Teaching activities done in both the experimental and control groups were insufficient in teaching this rule. One of the reasons for this result may be the students' not correlating the sample texts used in the teaching process and the text used in the empirical process. Students in both groups could not transfer what they had learnt. According to Garner (1990), one of the factors affecting the teaching strategy is the transferring feature of the learned strategic activity to other weak situations. According to the results of the current paper, the rules "take only one piece of repeated information into the summary" and "take the sentences containing the important information" are the basic rules comprising the summarizing process. In reality, both rules are related to each other. This is because the sentences that repeat each other are determined and one of them is accepted as the important sentence, which is then taken into the summary. Both of the rules' use rates being very close in the research are a consistent result indicating this relationship. Garner (1985) remarked that the ninth and eleventh grade students had problems choosing the important information to include in their summaries (cited by Anderson and Hidi 1989). Hahn and Garner (1985) concluded that the students chose information related to their personal interests instead of choosing the important information in the text. Winograd (1984) remarked that the eighth grade students knew they should choose the important information while summarizing a paragraph but had difficulties determining it (cited by Hahn and Garner 1985).

Students in the experimental and control groups could not use the two rules among the choosing rules, the rules "choose the important sentences" and "choose the main idea sentences" sufficiently. However, the rule "choose the main idea sentence" was used more effectively even if it was used rarely. It can be said that both approaches were effective at similar rates in teaching these rules. Day (1980) found that the students were less adequate at applying a rule in natural texts. Cakir (1995) found that low scores were given in the natural text summaries in choos-

ing the important information and taking them into summary. These results concur with the findings of this research.

The rule “delete sentences containing unrelated and unimportant information” among the deleting rules has the highest application rate in the current paper. Brown and Day (1983) remarked that the deleting rule was the easiest rule for students to apply. Teaching activities organized with both the direct instruction and reciprocal teaching approaches caused positive effects in the learning of these rules. The reason for this situation may be the fact that both rules require similar application processes. Because the unrelated and unimportant sentences in this text spoil the topic and meaning coherence, they are the most remarkable sentences. This result may be related to the age levels of the students. This finding is different from the findings of other studies (Cakir 1995; Williams et al. 1984). In both the studies it was found that the students had difficulties deleting the unrelated information. When the fact that this research was done on the ninth grade students and the research of Cakir (1995) was done on the fourth grade students of the primary school is considered, it can be said that the rate of use of the rule “delete the unrelated information” increases with age. Brown and Day (1983) found that the rule “deleting the unimportant information” was used effectively in all grades (fifth, seventh and tenth). This finding is very similar to the finding of this research. In this research, “deleting the unimportant information” is the rule with a use rate which is the highest in both groups.

CONCLUSION

The purpose of this paper was to investigate whether the “reciprocal teaching” approach or the “direct instruction” approach is more effective in teaching summarizing rules. Moreover, the paper looks at which summarizing rules are difficult to apply. At the end of the present paper, it was found that the reciprocal teaching and direct instruction approaches have a similar effect on teaching summarizing rules.

It was also observed that the students’ usage levels of summarizing rules are very similar to each other in both, the experimental and control groups. Since the effectively used rules and barely used rules present a similarity in both groups, summary scores are also found to be

similar. For instance, both groups used “take only one sentence into summary from repeated sentences” rule in their summaries at the same rate (40%).

Applying different approaches in teaching summarizing rules made no difference to the students’ summarizing performances. Though application techniques and steps are different, both approaches have a similar effect on teaching summarizing rules. Therefore, both approaches can be applied in instruction. However, different results can be found in other studies since factors such as instructional time and text structure could have similar effects on the results. It is possible that conducting the paper on an authentic text might affect the results. Students from both groups might miss the core of the text (push it into the background) while they were searching the rules to implement during summarization. This concern was also apparent during research through unsystematic observations.

RECOMMENDATIONS

More and more diverse samples should be used in teaching the rules “deleting the repeated information” and “choosing the important information” in teaching summarizing rules. Similarity between the texts to be used in teaching and the texts to be used in experimental process in terms of content, subject and word count should be important. More time should be allocated for summarizing education programs. Teaching strategy alone is insufficient. Knowledge about the structural features of the text may be given to the students in the summarizing education in future research.

REFERENCES

- Anderson V, Hidi S 1989. Teaching students to summarize. *Educational Leadership*, 46(4): 26-28.
- Bretzing BH, Kulhavy RW, Caterino LC 1987. Note taking by junior high students. *Journal of Educational Research*, 80(6): 359-362.
- Brown AL, Day JD 1983. Macrorules for summarizing texts: The development of expertise. *Journal of Verbal Learning and Verbal Behavior*, 22: 1-14.
- Brown AL, Day JD, Jones RS 1983. The developments of plans for summarizing text. *Child Development*, 54: 968-979.
- Cakir O 1995. *Buyuk Olcekli Kuralların Ogretiminin Okudugunu Anlamaya Etkisi*. PhD Thesis, Unpublished. Ankara: Hacettepe Universitesi.
- Cikrikci SS 2008. Ilkogretim ogrencilerinde ozetleme becerisinin gelismesi. *Dil Dergisi*, 141: 19-35.

- Day JD 1980. *Teaching Summarization Skills: Comparison of Training Methods*. PhD Thesis, Unpublished. Urbana: University of Illinois.
- Dogan A 2013. Ustbilis ve ustbilise dayali ogretim. *Middle Eastern and African Journal of Educational Research*, 3: 6-20.
- Erdem C 2012. Turk Dili ve Edebiyati ogretmen adaylarinin ozetleme stratejilerini kullanim tercihleri ve metin dil bilimsel bir ozetleme calismasi. *Dil ve Edebiyat Egitimi Dergisi*, 1(3): 36-52.
- Eyup B, Stebler MZ, Yurt-Uzuner S 2012. Turkce ogretmeni adaylarinin ozetleme stratejilerini kullanmadaki egilimleri. *Dil ve Edebiyat Egitimi Dergisi*, 1(1): 22-30.
- Garner R 1990. When children and adults do not use learning strategies toward a theory of settings. *Review of Educational Research*, 60(4): 519-529.
- Hahn AL, Garner R 1985. Synthesis of research on students' ability to summarize text. *Educational Leadership*, 42(5): 52-55.
- Karatay H, Okur S 2012. Ogretmen adaylarinin okuyucu ve bilgilendirici metinleri ozetleme becerileri. *International Journal of Social Science*, 5(7): 399-420.
- Kinstch W, van Dijk TA 1978. Towards a model of text comprehension and production. *Psychological Review*, 85(5): 363-394.
- Kusdemir Y, Gunes F 2014. Dogrudan ogretim modelinin okudugunu anlama becerilerine etkisi. *Mehmet Akif Ersoy Universitesi Egitim Fakultesi Dergisi*, 32: 86-113.
- Palincar AS, Brown AL 1984. Reciprocal teaching of comprehension-fostering and comprehension – monitoring activities. *Cognition and Instruction*, 1(2): 117-175.
- Pressley M, Johnson CJ, Symons S, McGoldrick, Kurtia JA 1989. Strategies that improve children's memory and comprehension of text. *The Elementary School Journal*, 90(3): 3-9.
- Raslie H, Mikeng D, Ting SH 2015. Reciprocal teaching and comprehension of struggling readers. *International Journal of Education*, 7(1): 131-142.
- Rinehart SD, Stahl SA, Erickson LG 1986. Some effects of summarization training on reading and studying. *Reading Research Quarterly*, 21(4): 422-438.
- Rosenshine B, Meister C 1994. Reciprocal teaching: A review of the research. *Review of Educational Research*, 64(4): 479-530.
- Schunk HD 2009. *Learning Theories: An Educational Perspective* (Trans. Eds. Muzaffer Sahin) Ankara: Nobel Press.
- Senemoglu N 2013. *Gelisim, Ogrenme ve Ogretim*. Ankara: Pegem A Press.
- Seymour JR, Osanab HP 2003. Reciprocal teaching procedures and principles: Two teachers' developing understanding. *Teaching and Teacher Education*, 19: 325-344.
- Sahin M 1983. *Is Idaresinin Temel Kavramlari*. Ankara: Anadolu University Press.
- Taspinar M, Atici B 2002. Ogretim model, strateji, yontem ve becerileri/teknikleri: Kavramsal boyut. *Egitim Arastirmalari Dergisi*, 8: 207-215.
- Turgut F 1985. *Egitimde Olcme ve Degerlendirme Metotlari*. Ankara: Saydam Matbaacilik.
- Williams JP, Taylor MB, de Cani JS 1984. Constructing macrostructure for expository text. *Journal of Educational Psychology*, 76(6): 1065-1075.