

# Question-Answer Relationships in Social Studies Courses with Students with Hearing Loss

Elif Akay<sup>1</sup>

<sup>1</sup> Anadolu University, Faculty of Education, Department of Special Education Faculty Member, Eskisehir, Turkey

Correspondence: Elif Akay, Assoc. Prof. Anadolu University, Faculty of Education, Department of Special Education Faculty Member, Eskisehir, Turkey

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## Abstract

Educational settings adopt an active participatory learning process in which students with and without hearing loss are guided towards knowledge through questions. Questions are believed to improve critical, creative and high-level thinking skills. This research is a case study aimed at identifying and suggesting some solutions to the problems that students with hearing loss experience in understanding and answering the types of questions asked in a Social Studies course. Eight students with hearing loss participated in the study. Data were collected through observations, interviews, documents, research logs and process products. Analysis of the data suggests that students with hearing loss are able to answer some cognitive memory questions as well as those that call for convergent thinking, divergent thinking and evaluative thinking skills in the Social Studies Course while requiring the instructor to simplify and materialize the question and encourage the students to interact with the group for some others.

**Keywords:** question-answer relationships, oral questions, students with hearing loss, Social Studies course, cochlear implant

## 1. Introduction

Curiosity is one of the prerequisites for learning. From an early age, we seek information through asking questions (Wade & Kidd, 2019). Questions offer students the opportunity to express their thoughts, develop new ideas, integrate their past knowledge with new, relate concepts and identify problems (Beskisiz, 2009; Borodina et al., 2019; Tofade et al., 2013; Kracl, 2012). Therefore, it is important to instruct primary school students with and without hearing loss on how to answer various types of questions. Literature shows that question types are categorized in accordance with Bloom's taxonomy as knowledge dimension questions and cognitive dimension questions (Anderson et al., 2001). It is noted that questions in the knowledge dimension used in this process improve critical thinking, and questions in the cognitive dimension improve creative thinking (Gallavan & Kottler, 2012). According to Gallagher and Aschner (1963), questions in the *knowledge dimension* can be classified as (a) cognitive dimension questions and (b) convergent thinking operation questions, whereas those in the *cognitive dimension* can be classified as (a) divergent thinking operation questions and (b) evaluative thinking operation questions.

*Cognitive memory questions* require naming, remembering, and defining information, and *convergent thinking questions* involve explanation, description, comparison and association. *Divergent thinking operation questions* require prediction, hypothesis and application, *evaluative thinking operation questions*, on the other hand, facilitate creative thinking, making choices and creating your own thoughts.

This classification was later used by Barth and Demirtaş (1997) for a Social Studies course, while Blooser (2000) came up with the headings 'closed' and 'open' questions for these categories. This study adopts the classifications used by Gallagher and Aschner (1963) and Barth and Demirtaş (1997).

In the Social Studies curriculum, the importance of questions is emphasized in the use of skills to access information by questioning, use past knowledge in new situations, make comparisons and express subjective thought (Milli Eğitim Bakanlığı, 2018). However, it is noted that the association of topics with Citizenship, History, and Economics in the Social Studies course makes it difficult for students with and without hearing loss

to understand and answer the questions (Gallavan & Kottler, 2012; Grant et al., 2017). Therefore, instructors need to strike a balance between the two groups of questions as (1) the cognitive memory and convergent thinking questions which can be answered by the majority of the students aiming to facilitate students' understanding of the course content and critical thinking skills, and (2) divergent and evaluative questions which connect the information with real life experience (Grant et al., 2017; Kracl, 2012). It is also emphasized that supporting the questions with materials and following a thematic approach is important to make the subject matter easier to grasp (Alongi, Heddy, & Sinatra, 2016; Huck, 2019).

Social studies course and Natural Sciences courses have many common features in terms of topics and concepts. Hence, research focusing on question types in Natural Sciences courses have also been included in this study. All these studies contend that asking a variety of questions that require processing information help students improve their higher cognitive thinking skills and that instructors can ask forwarding questions to help students when they cannot answer the questions (Chen, 2017). Still, literature on Social Studies with hearing students propound that cognitive memory and convergent thinking questions are more frequent than divergent thinking and evaluative questions (e.g., Kılınc & Çalışkan, 2019; Şanlı & Pınar, 2017; Vanderhook, 2020).

Past research on the question-answer relationships with students with hearing loss has found that such students in inclusive classrooms understand the wh- questions but have difficulty in internalizing the information and that they needed verbal and visual clues to understand the question (Bullard & Schirmer, 1991). Besides, due to the fact that hearing loss limits oral language skills and vocabulary range and that the student has not seen a specific question type before, these students' ability to understand and generate questions, development of imagination and alternative perspectives have been found to be much lower than their hearing peers (Eden, 2008; Friedmann & Szterman, 2010). For this reason, it is necessary to study question phrases, vocabulary, question forms and question-answer strategies in literacy courses with students with hearing loss (LaSasso, 1990).

Advances in cochlear implant applications in the last 20 years have enabled students with hearing loss to acquire the oral language to the same extent as their peers (Chiossi et al., 2017; Moberly, 2016; Percy-Smith et al., 2018). It has been shown that students with hearing loss can display a similar performance to that of their hearing peers when necessary adaptations are made in Social Studies and Natural Science courses (Parveen, 2017; Sambu et al., 2018). Notwithstanding, students with hearing loss do need to practice oral and written question types more intensively so as to acquire higher-level thinking skills (Boucher, 2010; Susetyo et al., 2021). Obviously, students with hearing loss require more guidance, sufficient time to ponder the question and a clarification of divergent and evaluative thinking questions with cognitive memory and convergent questions (Gallavan & Kottler, 2012).

There are several studies in the literature on question types in the Social Studies course with hearing students (e.g., Alongi, Heddy, & Sinatra, 2016; Grant et al., 2017; Vanderhook, 2020). On the contrary, studies on question-answer relationships in Social Studies courses with students with hearing loss are rather limited. Sambu et al. (2018) found that the Social Studies performance scores of middle school students with hearing loss using sign language were very low compared to their hearing peers, and adaptations should be made in the program and exam questions to enable better understanding of the social studies topics by these students. Meanwhile, Boucher (2010) points out that students with hearing loss give yes/no answers to cognitive memory, convergent, divergent, and evaluative questions. The same study also found that students with hearing loss can use academic language, express their thoughts and justify their answers with practice-based teaching using tools such as maps and graphic editors. Apart from Boucher's (2010), no research focused on cognitive memory, convergent, divergent, and evaluative thinking questions, students' answers and teacher guidance used in Social Studies classes with students with hearing loss.

As a result of the improvements in the educational policies of Turkey as a developing country, the profile of 'passive, listener student' is changing towards one of 'active, researcher and interrogator.' It is known that the use of a variety of question types contributes to critical and creative thinking, understanding questions and self-expression skills of students with and without hearing loss. In order for students with hearing loss to better understand, answer and use the question forms correctly, they need to be taught accordingly in the language and literacy courses. As per, in the Social Studies course, it is important to ask questions that stimulate cognitive memory, convergent, divergent and evaluative thinking so that they can understand the content covering topics such as citizenship, economics, history, geography, and thus develop higher cognitive thinking skills.

This research examines the oral questions asked and the answers given in the Social Studies course with students with hearing loss and discusses the strategies employed in the case of positive and negative outcomes. Findings herein may serve as examples of the types of questions, answers and strategies to comprehend the questions that

students with hearing loss use in a Social Studies course. The aim of this study is to examine the types of questions asked to students with hearing loss in the Social Studies course, the problems they experience in understanding and answering these questions, and possible ways to overcome these. Accordingly, the researcher seeks answers to questions such as (a) what kind of oral questions have been asked to students with hearing loss in the Social Studies course? and (b) What are the problems that students with hearing loss experience while struggling to understand and answer these questions?

## **2. Method**

This research is a case study aimed at identifying the types of questions asked to students with hearing loss in a social studies course, the problems they experience in understanding and answering these questions, and possible ways to overcome these problems. Case studies are studies based on in-depth study of events occurring in an authentic environment (Yin, 2018).

### *2.1 Educational Environment*

This research was carried out at the Education Research and Application Center for Hearing Impaired Children (İÇEM) at Anadolu University. At İÇEM, children with hearing loss are equipped with hearing aids at an early age, are offered family education and receive two years of half-day kindergarten education from the ages of 3–4 years. The institution also provides educational support to students with hearing loss who continue their education at the preschool, primary and secondary level and inclusive classrooms. İÇEM implements the curriculum of the Ministry of National Education at the primary and secondary school level, while concepts in Social Studies and Natural Sciences courses are also used in mathematics, language and literacy courses with a thematic approach. Follow-up activities that are carried out after classes allow students to use the knowledge and words they have learned in different contexts. Products created during the follow-up activities are displayed first on classroom pin-boards and activity corners during the coverage of the unit, and then they are put in display in the school corridors.

### *2.2 Participants*

The study involved 8 students with hearing loss, registered at the Primary 4th grade at İÇEM. The ages of the students vary between 9–10. 4 of the students have profound (96–121 dBHL), 1 has severe (94 dBHL), and 3 have moderately severe (72–90 dBHL arası) hearing loss. 7 students have a cochlear implant in the right ear and a behind-the-ear hearing aid in the left ear whereas 1 has behind-the-ear hearing aids in both ears. Students' cochlear implant ages range from 1.5–3. All the participants received family education, kindergarten education and preschool education at İÇEM and all have oral language skills. In accordance with the ethical principles, informed consent for every student was obtained, and the students are referred to with aliases throughout the research. The Social Studies courses were carried out by a researcher with 24 years of hearing-impaired-teaching experience.

### *2.3 Data Collection Tools*

During the research, data were collected through observations, documents, research logs and process products. Researchers used video recordings of the lessons to obtain an inventory of the observations in the analysis of the question types. Questions and answers have been analyzed by the validity and reliability committee for every lesson. Documents used throughout the study include the minutes of the validity and reliability committee meetings, students' audiograms and lesson plans. The types of questions that the students had difficulty answering during the Social Studies courses have been enlisted in the research log and assessed in the validity and reliability meetings. Process products consist of the classroom presentations, visual materials and task cards.

### *2.4 Validity and Reliability*

Diversification of data collection tools (triangulation) is required to ensure the validity and reliability of case studies (Miles & Huberman, 2015). In this study, data were obtained from observations, interviews, documents, research logs and process products. During the validation process of the study, the researcher worked with two field experts with 40 and 27 years of experience in the field of qualitative research methods in the education of students with hearing loss. The validity and reliability committee watched 50% of the video recordings of the courses and examined the transcripts of the questions and answers used during the course. The parties attained a 100% consensus on the reliability regarding the themes.

### *2.5 Data Collection and Analysis*

Research data were collected during the second semester of the 2017–2018 academic year. Students received 10 hours–2 hours a day of Social Studies course a week. The teacher covered the overall topic and the questions

with the students in the first hours. In the second hours, students carried out a follow-up activity in which they prepared task cards, fliers and models to reinforce their learning. Themes are obtained as a result of the analysis of 31 video recordings over 7 weeks. A breakdown of the questions and the answers of the students in the first hours of the social studies course was prepared. Topics, dates and time used in data analysis are presented in Table 1.

Table 1. Topics, dates and time of Social Studies course questions and answers

Video	Date	Time	Units/Subjects
			Topics in Science, Technology and Society Unit
V1	26.02.2018	50'40''	Technological Products Around Us
V2	27.02.2018	50'37''	Life Before Technology
V3	28.02.2018	50'29''	Developments In Transportation, Health and Education
V4	01.03.2018	50'40''	Historical Development of the Clock
V5	02.03.2018	50'30''	Age of Inventors
V6	14.03.2018	50'31''	Let's Design
V7	15.03.2018	50'33''	Benefits Of Technology
			Topics in Production, Distribution and Consumption Unit
V8	26.03.2018	50'30''	Features of the Products We Buy
V9	28.03.2018	50'33''	My Rights and Responsibilities as a Consumer
V10	30.03.2018	50'32''	Saving and Wasting
			Topics in Effective Citizenship Unit
V11	04.04.2018	50'36''	Our Responsibilities as Children
V12	09.04.2018	50'35''	I Want to Join Students' Societies
V13	10.04.2018	50'38''	Coding Society
V14	11.04.2018	50'33''	Non-Governmental Organizations
V15	17.04.2018	50'33''	Governance in Our Country

As shown in Table 1, the data were obtained over 15 courses and three different units. The examples used were selected from different levels of questions. Data logs were examined by two field experts and the researcher, and the types of questions used in the course, the questions that students have difficulty understanding and answering, and the actions that the teacher took to improve the understanding of the students were determined. The themes that emerged from the analysis of the data are (a) *similar and dissimilar questions in the exposition, development and recapitulation* of the subject matter for the first research question, (b) *the actions that the teacher takes to help students understand the questions* and (c) *group dynamics that help students answer the questions* for the second research question. The findings include examples that best reflect themes.

### 3. Results

#### 3.1 Oral Questions Asked to Students with Hearing Loss in Social Studies Class

Examples of the types of cognitive memory, convergent, divergent and evaluative questions used by the teacher in the Social Studies course are presented in Table 2.

Table 2. Examples of question types

Types of questions	Question Samples
Cognitive memory questions	<ul style="list-style-type: none"> <li>Do you remember what we should be paying attention to when we were shopping?</li> <li>What does it mean not to waste?</li> <li>What should we pay attention to when using batteries?</li> </ul>
Convergent Questions	<ul style="list-style-type: none"> <li>Why is chocolate a processed substance?</li> <li>If we didn't have motor vehicles, which vehicle would you choose to go from Eskişehir to Istanbul?</li> <li>What might be the challenges of using a sundial?</li> </ul>
Divergent Questions	<ul style="list-style-type: none"> <li>How can you tell that TEMA is an environmental organization?</li> <li>What are you going to do to promote the Computer Society?</li> <li>What could happen if we do not follow the rules in Turkey?</li> </ul>
Evaluative Questions	<ul style="list-style-type: none"> <li>Why do you think the kid (in the video) wanted to do a food bowl project?</li> <li>What kind of a project would you consider for stray animals?</li> <li>What do you think the use of technology has changed in our lives?</li> </ul>

The findings including the samples of the question types and students' responses in Table 2 have been presented under the theme *similar and dissimilar questions in the exposition, development and recapitulation*.

(a) Similar and dissimilar questions asked in the in the exposition, development and recapitulation sections

This study determined that cognitive memory questions were the ones used most frequently in the exposition stage of Social Studies courses. For example, in the exposition stage of Our Rights and Responsibilities as Consumers chapter in the Production, Distribution and Consumption unit the cognitive memory question "Do you remember what we should be paying attention to when we were shopping?" was answered by Cengiz as "Yes, we must first get our needs," by İbrahim as "We have to pay attention to expiration dates," and by Rutkay as "We have to check the packaging," as they all answered the question by using the information they retained from earlier (V9, 3'34"). However, in the exposition stage of Saving and Wasting chapter in the same unit, the cognitive memory question "What does it mean not to waste?" was answered by İbrahim as "You turn on the water tap, and if it flows away, it's a waste. You buy bread, don't eat it and throw it in the garbage, it is wasted," by Ufuk as "Not to throw away something that we bought," and by Mehmet as "You paid for something, then you threw it away, your money goes to waste." In all cases the students tried to answer the question through examples but failed to define the concept (V10, 6'30").

In addition to cognitive memory questions, convergent, divergent and evaluative questions were used in the development stage of the Social Studies course. For example, in the development stage of the Technological Products around Us chapter in the Science, Technology and Society unit, the cognitive memory question "What should we pay attention to when using batteries?" was answered by Mehmet as "We must not throw away the batteries of our device when they run out," by Cengiz as "We have to throw the batteries in the Recycle Bin," by Rutkay as "If we touch it when the battery leaks, we have to wash our hands, or we will be poisoned," and by İbrahim as "We must be careful when charging batteries. The batteries of my remote-controlled car exploded while I was recharging them." In this case, all responses were based on the personal experience of the students (V1, 22'14").

In the development stage of the course, convergent questions were also included. In the Production, Distribution and Consumption unit, various convergent questions were used in the development stage of the Properties of the Products We Buy chapter. For instance, Cengiz answered the question "What is an example of a natural object?" as "It could be a flower." Tarkan answered the question "What makes you think a flower is a natural object?" as "Because it grows on its own." İbrahim answered the convergent question "What could be an example of an artificial object?" as "The hearing aid is made by the people so it is an artificial object." After explaining that chocolate is a processed product, Rutkay answered the convergent question "Why is chocolate a processed product?" as "Because they put in cacao, sugar and milk and then mix them" (V8, 10'14"). It was observed that students drew attention to the similarity of the concepts of natural and artificial matter that they learned in the Science course.

Divergent questions were also used in the development part of the Social Studies course. For example, during I Want to Join Students' Societies chapter in the Active Citizenship unit, Coding Society has been described as one of the students' societies. Students stated that they play computer games. Then they played a coding game in which algorithms were created using code blocks. İbrahim was asked the convergent question "Why did you choose to use these code blocks?" after he explained the blocks of code he would use to take the dog to its house. He explained his reasoning as "The left and the right is barred so we need to go two squares down and since there is a rock over there we cannot go forward. We need to go two squares right and to reach the house we must go two squares up" (V12, 36'35"). In the Non-Governmental Organisations chapter of the same unit, the discussion was about Türkiye Erozyonla Mücadele ve Ağaçlandırma Vakfı (TEMA) (The Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats). In order to point out that the logos of NGOs are indicator of their activities, the students were asked the divergent question "How can we tell that TEMA is an environmental organization?" which they couldn't answer. They were expected to recognize the leaf in the logo when they were asked "What do you see in the logo?" Through this question, the instructor tried to help the students understand that TEMA is an environmental organisation (V14, 20'30").

In the development stage of the Social Studies course, students were also asked evaluative questions. For example, in the Let's Design chapter of the Science, Technology and Society unit, Cengiz was able to answer the evaluative question "Why do you think the kid (in the video) wanted to do a food bowl project?" concerning the case study of the child who created the project for animals as "Because he's helpful," whereas Mehmet replied "He wanted to feed various animals." When they were asked the evaluative question "What kind of a project would you consider carrying out for stray animals?" Rutkay gave an inappropriate answer by saying "I already

*feed the dog in the garden of our community everyday*" (V6, 21'25"). As seen here, when they were asked to think of a project related to feeding or housing animals, students were unable to answer the question.

Convergent, divergent and evaluative questions were used in the conclusion stage of the Social Studies course, as well. For example, in the conclusion stage of Developments in the Field of Transport chapter in the Science, Technology and Society unit, Murat answered the convergent question *"If we didn't have motor vehicles, which vehicle would you choose to go from Eskişehir to İstanbul?"* as *"We'll go by bike."* Tarkan and İbrahim said, *"We can ride in a horse-drawn cart."* The convergent question *"Why would you use animals instead of a bike?"* was answered by İbrahim as *"Because the animals are stronger than us and they wouldn't get tired"* (V3, 48'35"). In the conclusion stage of I Want to Join Students' Societies chapter in the Active Citizenship unit, students wanted to create a computer society. Cengiz answered the divergent question *"How would you promote the computer society?"* by saying *"Let's prepare posters."* Ufuk said, *"We should write 'Do you want to join our society?'"* and Rutkay said *"We should prepare brochures, too."* İbrahim suggested *"We should have visitor and attendant cards,"* and Tarkan said, *"We should put our photos, names, surnames and the name of the society on the cards"* (V12, 39'51"). In the Governance in Our Country chapter of the same unit, Mehmet replied the divergent question *"What might happen if we break the rules in our country?"* as *"You can go to jail."* The divergent question *"Why are people put into jail when they break the rules?"* was answered by Rutkay and Murat as *"So that they don't do it again,"* whereas Tarkan said *"So that they behave."* When the students were told that the people in jail cannot do as they wish, Mehmet commented on this by saying, *"When people go to jail, they wish they hadn't done what they did and they don't do it again."* (V15, 43'39").

In the conclusion stage of the Benefits of Technology chapter in the Science, Technology and Society unit, the students were asked *"What do you think the use of technology has changed in our lives?"* as an evaluative question. İbrahim responded by saying, *"Motorized machines were invented,"* whereas Cengiz said, *"Work was done in a shorter time."* Mehmet replied the question by saying, *"Fewer people work now. In the past it took many people to complete a job. When technology came in to play one person can do the work quickly with the help of machinery"* (V7, 45'20").

### *3.2 Problems That Students with Hearing Loss Experience in Understanding and Answering Question and Some Possible Solutions*

Although students with hearing loss are given sufficient time to answer the questions in the research process, due to having limited knowledge and experience on the subject of the new information, it was observed that they could not absorb the new information immediately, could not answer some questions and had difficulty in expressing themselves while answering others. Strategies to solve these problems are presented under themes *actions that the teacher took to help students understand the questions* and *group dynamics used to answer questions*.

#### *(b) Actions the teacher took to help students understand the questions*

It was seen that participating students needed support to understand and answer questions in the Social Studies course.

*Asking guiding questions and offering explanations to students.* In the Science, Technology and Society unit, while covering the chapter on the Historical Development of the Clock, students and the teacher discussed how the sundial, water clock, candle clock, mechanical clock and digital clock worked. The students were asked *"What could be the difficulties experienced while using sun/water/candle clocks?"* as a convergent question and they failed to come up with an answer. Explanations and additional guiding questions were required for students to answer these questions. The cognitive memory question, *"When can we use a sundial?"* used as a guiding question was then answered by İbrahim as *"Only in sunny weather."* Tülin was unable to answer the cognitive memory question, *"What happens if the weather is cloudy?"* and the teacher had to explain that *"There would be no shadows on the sundial on a cloudy day."* The divergent question *"What happens if it rains when you are using a water clock?"* was answered by Mehmet as *"The water level won't go down and it will show the wrong time."* (V4, 25'12").

*Providing additional information for students to answer the question correctly or providing multiple choice answers.* In the Science, Technology and Society unit, while covering the Life Before Technology chapter, Mehmet answered the divergent question *"How many days does it take to go to İstanbul with non-motorized vehicles used in the past?"* as *"1-2 years"*, whereas Cengiz said *"An hour"*, and Rutkay said *"3 months"* thereby making predictions far apart from each other. When they were given the information that the high-speed train takes 3 hours and the bus takes 5 hours to get to İstanbul, Mehmet revised his answer as *"1-2 days,"* and Rutkay and Cengiz revised their answers as *"1 week,"* (V2, 49'50"). In the Age of Inventors chapter of the Science,

Technology and Society unit, Ufuk answered the cognitive memory question “*What is an inventor?*” as “*Inventor means scientist.*” Mehmet replied the divergent question “*Do you think all scientists are inventors?*” as “*No*” but failed to provide an explanation for his answer. When the students were asked the cognitive memory question “*Are the people who performed your (cochlear implant) surgery scientists or inventors?*” Rutkay, Cengiz and Mehmet chose “*Scientist,*” among the alternatives provided. The convergent question “*Why do you think they are scientists?*” was answered by Cengiz as “*They don’t invent anything,*” and by Ufuk as “*They didn’t discover anything people didn’t already know.*” (V5, 0’35”).

#### (c) Group dynamics used to answer questions

Students were allowed to collaborate to participate in teacher-led discussions when their vocabulary, grammatical knowledge and academic aptitude concerning Social Studies course concepts turned out insufficient.

*Students’ use of each other’s answers.* On Governance in Our Country chapter in the Active Citizenship unit, the cognitive memory question “*What is the Constitution?*” was answered by Ufuk as “*The Constitution is a very thick book, with thousands of Rights written in it.*” Tarkan was asked the cognitive memory question “*What is written in the constitution?*” to which he replied “*Words are written.*” İbrahim answered the same question as “*The rules and how we should behave is written in the Constitution.*” When Tarkan was asked the question again, he was able to reply as “*The Constitution is a book and the rules are written in it*” (V15, 40’12”).

*Students giving each other clues from the material.* In the Properties of the Products We Buy chapter of Production, Distribution and Consumption unit, Rutkay related an experience and said, “*We went to the supermarket. We told them that the biscuits tasted bad. But they said, ‘We don’t sell products that have gone bad,’ and refused to change them.*” The students were then asked the convergent question “*What do we have to do when returning products that have expired?*” İbrahim offered an incomplete answer by saying, “*We can show them the date of expiry.*” When the students were asked the cognitive memory question “*Can we return products just by showing the date of expiry?*” Mehmet pointed out to the receipt on the smart board and said “*We need the receipt.*” When they were asked the convergent question “*Why do we need the receipt?*” Ufuk replied by saying “*Because you have the date and the name of the supermarket on the receipt,*” by pointing out to the relevant pieces of information on the receipt (V8, 32’17”).

#### 4. Discussion

The Social Studies course aims to develop the skills of reaching knowledge by questioning, using past knowledge in new situations, making comparisons and expressing subjective thought. It is emphasized in the literature that the use of various question types plays an important role in the development of these skills (Beskisiz, 2009; Boucher, 2010; Grant et al., 2017). It is observed that many researchers basically divide the types of questions into the knowledge and cognitive dimensions, but classify the questions differently (Barth & Demirtaş, 1997; Blooser, 2000; Gallagher & Aschner, 1963). In this study, it was found that students with hearing loss were asked more cognitive memory questions in the introductory part of the courses so that they could attain the goals of the Social Studies course. Cognitive memory, convergent, divergent and evaluative questions were included in the development and conclusion sections of the course.

During the course of the research, it was determined that there were cognitive memory, convergent, divergent, and evaluative questions that the participating students could answer without verbal and visual cues. There are several reasons for this. First, the thematic structure of the research program allowed students with hearing loss to repeat the question types in language, literacy, mathematics, painting, and music classes. It is stated in the literature that the thematic approach allows retention by providing the opportunity to repeat the information in different courses (Huck, 2019). Second, in this research, various materials were used to visually support subjects in Social Studies courses. Supporting the social studies course with materials makes important contributions to the learning of concepts (Alongi, Heddy, & Sinatra, 2016). In addition, it can be said that the display of student products created during follow-up activities on class boards and corners contributes to students’ retention of new knowledge and concepts. It is also believed that the display of these products in school corridors encourages other students in the school to exchange information with each other by asking questions about the products. The third reason could be that participants have received family education and started using cochlear implants at an early age. With the advances in cochlear implant applications, students with hearing loss can acquire oral language as successfully as their hearing peers (Chiossi et al., 2017; Moberly, 2016; Percy-Smith et al., 2018). It can be claimed that early family education and cochlear implant application of the participants in this study helped answer the questions seen in the findings.

During the research, it was observed that students had difficulty answering some cognitive memory, convergent,

divergent, and evaluative questions. In the literature, students with hearing loss are reported to have difficulties answering questions such as Who, What, and Where (Bullard & Schirmer, 1991). Participants in this study were able to understand the questions asked in question words such as Who, What, Where, How, and Why, but had difficulty answering the questions when they included the concepts of Social Studies. As an example, instead of answering the cognitive memory question “*What does it mean not to waste?*” with reference to concepts such as prudence, consumption of resources, etc., the students tried to answer the question by exemplifying certain behaviours.

In some cases, students were seen to be unable to answer some questions because their experience was limited. For example, in the case of the divergent question “*How can you tell that TEMA is an environmental organization?*” it is believed that they could not answer the question because they did not have related experience with non-governmental organizations and their logos. Students were only able to answer the question when they were told that they could find a hint in the logo. Some researchers highlight that topics such as citizenship, history and economics are included in Social Studies, which makes it difficult for students with and without hearing loss to understand and answer the questions (Gallavan & Kottler, 2012; Grant et al., 2017). Still others suggest that students with hearing loss have not seen these kinds of questions before and this, with complex grammar and their limited vocabulary, makes it difficult for them to fully understand and answer the divergent and evaluative questions (Bullard & Schirmer, 1991; Friedmann & Szterman, 2010; Susetyo et al., 2021). Therefore, in order to improve students’ understanding of Social Studies content, adaptations should be made both in the program and the questions (Sambu et al., 2018; Susetyo et al., 2021). Adaptation in questions may include employing cognitive memory and convergent questions when divergent and evaluative questions cannot be answered (Gallavan & Kottler, 2012). Similar to relevant literature, in this study, adaptations were made in sentence structures so that students could understand the questions, and when they could not answer the evaluative and divergent questions, these questions were simplified through convergent and cognitive memory questions. Findings suggest that following these procedures, students could understand and answer the questions. This observation parallels Parveen’s (2017) research finding that students with hearing loss can perform similarly to their hearing peers when necessary adaptations are made in Natural Sciences courses.

During the research, it was determined that the participating students could not answer some divergent and evaluative questions despite the teacher’s explanations, directions and oral and visual cues. For example, students have failed to come up with an answer to the evaluative question “*What kind of a project would you carry out for stray animals?*” Divergent and evaluative questions are of great importance for supporting creative thinking skills (Gallavan & Kottler, 2012) because creative thinking requires students to independently identify the problem, relate concepts, and express their own opinions (Borodina et al., 2019). In the follow-up activities in this study, creative thinking was supported by repeating concepts the students had learned earlier. Nevertheless, participants were unable to answer some of the questions like their hearing peers. This can be explained by the fact that hearing loss negatively affects the use of terminology, the development of imagination and alternative perspectives (Eden, 2008).

During the research, it was observed that teacher guidance and peer interaction played an important role in solving problems in understanding and answering questions. Students need teachers’ guidance to use their experiences, verbal and visual cues when answering divergent and evaluative questions (Gallavan & Kottler, 2012). As stated in this research, the teacher asked guiding questions for clarification or simplified the questions when the students did not understand them. The teacher provided additional information, clarified some points or provided multiple choice answers to help students answer the question correctly. This research covered challenging questions in addition to those that the students could answer easily so that it was possible to observe how they performed at different levels of difficulty in the face of cognitive memory, convergent, divergent and evaluative questions in the Social Studies course (Barth & Demirtaş, 1997).

## 5. Conclusion

The findings of this research show that students with hearing loss experience various problems in accessing information by questioning, using past knowledge in new situations, making comparisons, and answering divergent and evaluative questions that require expressing subjective thought in the scope of the Social Studies course. This can be explained by the delay in their language experience due to hearing loss which limits their ability to use the course strategies at the desired speed. However, the findings also reveal that students with hearing loss can answer cognitive memory, convergent, divergent and evaluative questions with the necessary adaptations and guidance that support remembering, associating, and combining knowledge with life. It can be said that students with hearing loss can actually answer these types of questions when divergent and evaluative questions that students cannot answer are explained through cognitive memory and convergent questions,



collaboration, and use of additional materials.

## 6. Limitations and Recommendations

This research is limited to students with hearing loss in the Social Studies class who are in the 4th grade of Primary School at İÇEM. Further research could focus on the evaluation of question-answer relationships with students with hearing loss in other academic courses, comparison of their answers with their hearing peers in a quantitative research environment, and an examination of educational practices aimed at developing question-answer strategies from an earlier age with a greater number of participants so as to obtain a richer set of outcomes to yield to generalization.

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