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Life Skills from the Perspectives of Classroom and Science Teachers

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Abstract

The aim of this study is to determine classroom and science teachers' views about life skills. The study employed phenomenological method. The participants of the study were 24 teachers; twelve of them were classroom teachers and the remaining were science teachers. They were working at public schools in Turkey. The participants were selected using the maximum variation sampling technique. The data of the study was collected through focus group interviews. Six focus group interviews consisting of four participants per focus group were conducted. The findings of the research showed, teachers play a significant role in the process of acquiring life skills. Furthermore, teachers expressed that science courses were significant setting to teach life skills. In the current research it was found that the participants used some in class and extracurricular activities to teach life skills. In addition, teachers expressed that they experienced difficulty in teaching life skills due to problems related to teachers, parents, school, educational program, educational system, school management and society.

Keywords: life skills, classroom teachers, focus group, science teachers, and curriculum

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Introduction

The Turkish Language Society defines a skill as follows: a skill "refers to one's ability to achieve and complete any action in accordance with the goals based on his information and competency" (www.tdk.gov.tr). Life skills are among the most significant skills for individuals. The World Health Organization (WHO, 1999) argued that there are many skills which can be regarded as life skills and that the nature and definitions of them may vary from one culture to another. On the other hand, there are numerous definitions of life skills (Hodge, Danish and Martin, 2013). For instance, life skills have been defined as "the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life" (WHO, 1999). Similarly, Kennedy and Pearson (2014) stated that life skills are competencies needed by individuals to maintain and enrich their daily life.

The WHO classified life skills into three major categories representing ten skills (WHO, 1997). Table 1 shows these skills together with the related category.

Table 1. The WHO classification of life skills (WHO, 1997)

Communication and Interpersonal Skills	Communication Negotiation/Conflict Management Skills Empathy Cooperation and Teamwork Advocacy
Decision Making and Critical Thinking Skills	Decision making/Problem solving skills Critical thinking skills
Coping and self-management skills	Increasing Internal Self-control Managing Feelings Managing Stress

In Uganda the basic education program has a three-category classification of life skills (CCert, 2014). This classification is somewhat different from the classification given above (WHO, 1997). It was reported that this difference resulted from country-specific and region-specific differences (Jayaram and Engmann, 2014; WHO, 1996). Table 2 gives the classification of life skills by the Uganda basic education program.

Table 2. Classification of life skills by the Uganda basic education program

The skills of knowing and living with one-self	Self awareness, Self esteem Coping with stress Emotion Assertiveness
The skills of knowing and living with others;	Interpersonal relationships Friendship formation, Empathy Negotiation skills Non violent-conflict resolution Effective communication skills
Skills of making effective decisions	Critical thinking Creative thinking Decision making Problem solving

In Turkey life skills have been included in the primary school education program and secondary education program through the revised science teaching program since 2013. As it is known, this program began to cover both the third and the fourth grades of primary education.

Life skills have become a significant part between attainments of educational programs (Mutluer, 2013). The content of educational programs should be organized in a way to improve children's life skills (Sharma, 2003; CCert, 2014; Roselyne, 2014). As stated above, since 2013, the science course at the third and at the fourth grades has involved life skills. In previous science teaching programs, there was no learning domain related to life skills. Related learning domains were added by the science program, which was revised and became effective in 2013. In parallel to this new learning domain, one of the goals of the science education program is for students to assume responsibility for daily problems and employ the life skills taught in science courses to solve students' problems (MONE, 2013a: 1). On the other hand, the units related to life skills covered in science courses are as follows: "Living beings and life", "Matter and Change", "Physical events" and "The World and the Universe" (MONE, 2013a: 4). Table 3 presents the learning domains covered in the revised science education program (MONE, 2013a: 4).

Table 3. Learning domains covered in the revised science education program

Knowledge	a. Living beings and life b. Matter and Change c. Physical events d. The World and the Universe
Skills	a. Scientific process skills b. Life skills - Analytical thinking - Making decisions - Creative thinking - Entrepreneurship - Communication - Team work
Affective domains	a. Attitude b. Motivation c. Values d. Responsibility
Science-Technology-Society-Environment	a. Socio-scientific topics b. The nature of science c. Relationship between science and technology d. Contribution of science to society e. Awareness on sustainable development f. Science and career awareness

As can be seen in Table 3, life skills covered in the science course are analytical thinking related to accessing and using scientific knowledge, decision making, creativity, entrepreneurship, communication and team work (MONE, 2013). Each of these skills are unpacked below.

Analytical thinking: Analytical thinking refers to informed guiding of mental processes in the cases of problem-solving and decision making (Stenberg, 2002). Those individuals with this skill know the major components of any problem in order to solve it and think about the characteristics of the problem (Malloy and Jones, 1998). Analytical thinking can be exemplified with an analogy to the work of mechanics. A good mechanics is familiar with the function of each part, but also takes into consideration how all the parts work together simultaneously (Dewey, 2007).

Decision making: Decision making refers to those skills which help individuals make choices in their daily (WHO, 1997). The decision making process consists of four steps: identifying the goal, developing alternatives to reach the goal, ordering the alternatives based on their relative importance, and choosing the most important alternative (Brynes, 2002). Those individuals with good decision making skills can evaluate the alternatives they have for their goals.

Creative thinking: Creative thinking is the ability to think intensively and in various forms (WHO, 1993). Creative thinking contributes to individuals' decision making skills and problem

solving skills in that it allows individuals to find out the results of their actions and to discover the existing alternatives (Erawan, 2010). Creative individuals can define a problem, believe in their ability to solve the problem, think in a logical way, synthesize prior and novel ideas, and develop totally new ideas (Starko, 2004).

Entrepreneurship: Entrepreneurship is defined as discovering opportunities in many fields (Reynolds, 2005). It also refers to dealing with an activity, organizing the necessary sources to enter a job, and assuming a responsibility over the risks and failure because of the activity (Kesim, 2010). It is very important to produce entrepreneurial individuals. During these processes teachers, parents, and education play a significant role (Polat and Aktop, 2010).

Communication: Communication can be defined as a process in which an individual expresses and communicates his or her feelings, views and information using common symbols to others (MONE, 2014). Efficient communication may be in the form of verbal or non-verbal communication based on cultural norms and specific conditions (WHO, 1997). Like it does in other fields, communication has an important role in science. Frequent ways of communication in science include verbal narrations, written statements, graphics, charts, symbols, diagrams, equations, and visuals (Dökme and Ozansoy, 2004).

Teamwork: Team refers to a small group of people who work towards a common goal dealing with an activity and share a common approach (Straub, 2002). Teamwork is necessary to have more productive outcomes. In team work, synergy occurs as a result of a collaborative work effort of the team (İlhan and İnce, 2015).

Research Focus

Both classroom teachers and science teachers are expected to make it possible for students to acquire these skills given above. Society needs individuals who efficiently employ the skills of lifelong learning (Soran, Akkoyunlu and Kavak, 2006). Individuals' success in various fields requires them to efficiently use life skills. Therefore, it can be argued that those individuals with life skills have advantages (Carroll, 2007). For instance, CCert, (2014) stated that those individuals with life skills play an active role in accessing information. In addition, it is reported that those with life skills have personal skills, including self control, and emotional regulation as well as the skilld needed to learn, including attentiveness, eagerness to learn, and concentration (Chien, Harbin, Goldhagen, Lippman and Walker, 2012). As stated earlier, life skills may vary based on cultural norms (Erawan, 2010). Thus, in each country different life skills may be encouraged and reinforced. On the other hand, life skills are not needed only in schools and formal institutions, but also in numerous settings (Botvin and Kantor, 2001). Therefore, individuals are expected to employ life skills in all fields. As mentioned above, the revised science education program in Turkey emphasizes the significance of life skills for students and the program includes numerous activities that are designed to improve life skills (MONE, 2013).

It is stated that teachers have a significant role to play in the process of life skills teaching (CCert (2014). One of the ways to teach life skills is to avoid negative acts and to encourage positive acts among students increasing their future expectations (Ibarraran, Ripani, Taboada, Villa and Garcia, 2014). It is reported that, during this process, teachers and parents should have a common understanding about life skills to foster the teaching of life skills (CCert, 2014; James, 2010). On the other hand, in many studies, teachers were found not to have any awareness of life skills (Sharma, 2003; James, 2010). In order to fill this gap, it is recommended that teachers should be educated about the significance of life skills through in-service training activities (CCert, 2014). It is also possible that pre-service teachers can be taught about life skills, because they will need such skills in their future profession in order to teach them to students. Therefore, teachers should have both information and skills regarding life skills and should employ teaching activities to improve life skills of students. There are some studies dealing with the factors affecting the acquisition of life skills. These factors include school, family, teacher, educational programs and society (CCert, 2014; Chien, Harbin,

Goldhagen, Lippman and Walker, 2012; Sharma, 2003; Parvathy and Renjith, 2015). Given that teachers are instrumental in teaching life skills, their views about these skills are significant in identifying the needs of teachers in teaching life skills. Therefore, this study provides an insight about which activities can be carried out to teach life skills to pre-service teachers and teachers through teacher training programs and in-service training programs, respectively.

In Turkey there is a study investigating the views of science teachers about life skills (Özdemir, 2015). Given that such studies are not frequent, the views of teachers about life skills should be further analyzed. In light of this view, the aim of this research is to identify classroom teachers' and science teachers' views on life skills. To this end, the study addresses the following research questions:

According to classroom and science teachers,

1) What do life skills mean?

2) Which life skills should be acquired by students?

3) Why is it important to teach students life skills?

4) How effective is science curriculum in helping students acquire life skills?

5) What kind of activities and sources are used to teach students life skills?

6) Which roles are played in teaching life skills?

7) How competent are they with teaching life skills?

8) What are the problems in teaching life skills?

9) What are the solutions and expectations in teaching life skills?

Method

Design

The study was designed as a phenomenological research study. The basic goal of this design is to reveal the experiences, perceptions and meanings of individuals about a specific fact (Yıldırım and Şimşek, 2013). Such research defines the common meaning of the experiences about a phenomenon or a concept (Creswell, 2013). In phenomenological research, the focus is on how people perceive a phenomenon, how they make sense of it, and how they define it. In order to collect data, in such a research framework, in-depth interviews with individuals who experienced the phenomenon are needed (Patton, 2014). In the study, these components of the phenomenological research were employed. Figure 1 summarizes the process of the research.

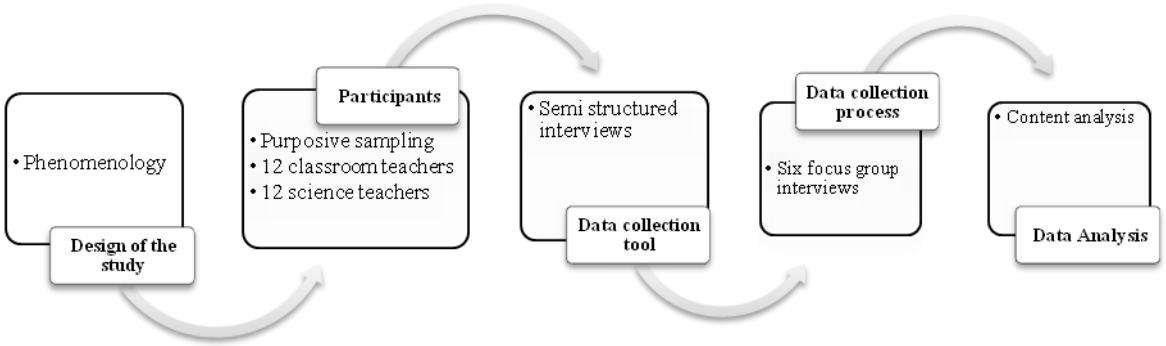

Figure 1: Research process

Participants

The participants of the study were twelve classroom teachers working at six public primary schools and twelve science teachers working at three secondary schools during the school year of 2015-2016. Therefore, a total of twenty-four teachers took part in the study. The participants were chosen using the maximum variation sampling which is part of purposive sampling techniques. The goal in using the maximum variation sampling is to form a relatively small sample and to include those people who are related to the problem at hand (Yıldırım and Şimşek, 2013). In qualitative research several points are taken into consideration in identifying the sample size. Qualitative research may focus on the study of a single or more than one cases or the study of a single group with certain characteristics. The much data the less participants rule is generally followed. In this study a total of 24 classroom and science teachers was included in the sample (Yıldırım and Şimşek, 2013). The factors taken into consideration in choosing the participants were their professional experience, branch, educational background, and the socio-economic status of the school. Tables 4 and 5 present information about twenty-four participants using their code names.

Table 4. Information about classroom teachers participated in the study

Code	Gender	Teaching experience	Teaching level	Educational background	Focus groups
İlker	Male	3	3	Graduate	1st focus group
Mesut	Male	9	4	Graduate	
Halil	Male	7	4	Graduate	
Furkan	Male	1	3	Graduate	
Ziya	Male	21	4	Undergraduate	2nd focus group
Bahadır	Male	36	4	Undergraduate	
Harun	Male	16	3	Undergraduate	
Ali	Male	22	3	Undergraduate	
Gül	Female	22	4	Graduate	3rd focus group
Ümay	Female	30	4	Undergarduate	
Banu	Female	27	3	Undergarduate	
Didem	Female	15	3	Undergraduate	

As can be seen in Table 4, there were eight male and four female teachers. In terms of professional experience, four of them had 1-10 year experience, two 11-20 year experience, and six 21 year or more years of experience. All of them graduated from the department of classroom teaching. Seven participants had completed currently enrolled in undergraduate education and five had graduate education.

Table 5. Information about science teachers participated in the study

Code	Gender	Experience	Grade	Educational background	Department	Focus groups
Mete	Male	15	5	Undergraduate	Science teaching	4th focus group
Gamze	Female	21	6	Undergraduate	Physics	
Funda	Female	23	8	Undergraduate	Biology	
Dilara	Female	18	7	Graduate	biology	
Yonca	Female	21	8	Undergraduate	Biology	5th focus group
Reyyan	Female	9	6	Graduate	Science teaching	
Kemal	Male	15	7	Undergraduate	Science teaching	
Fuat	Male	12	5	Undergraduate	Science teaching	
Dilber	Female	12	8	Undergraduate	Biology	6th focus group
Sema	Female	15	6	Undergraduate	Science teaching	
Oğulcan	Male	18	7	Undergraduate	Physics	
Kenan	Male	18	7	Undergraduate	Chemistry	

As can be seen in Table 5, there were seven females and five males. In terms of professional experience, one of them had 1-10 years of teaching experience, eight 11-20, and three 21 years or more. Five participants were the graduates of science teaching department, two were the graduates of physics department, four were the graduates of biology department and one was a graduate of a chemistry department. Ten of them had undergraduate education and two graduate educations.

Data collection tools

The data of the study were collected through a semi-structured interview form developed by the authors. The form included nine open-ended items. Semi-structured interviews allow for researchers to analyze the topics at hand in detail and to comprehend the answers (Harrell and Bradley, 2009). The items in the form were developed based on the review of literature. In order to establish internal and external validity the form was reviewed by seven specialists from the fields of educational programs and teaching, classroom teaching and science teaching. They were asked to review the form in terms of understandability of the items and of the consistency between the aim of the study and the content of items. Based on the feedback, four items were omitted from the form. Two of them were not regarded as consistent with the study aim and the other two were regarded as overlapping. The interview form with nine items was used in a pilot study on two teachers (one classroom teacher and one science teacher). The findings showed that the items were understood by the pilot study participants.

Procedure

Focus group interviews were used to collect the data of the study. The number of focus groups generally varied between four and eight people and the participants were asked to answer the questions. During the interviews the participants listened to one another's answers and they could use others' views to develop their own perspective (Fraenkel, Wallen and Hyun, 2012). In the study, there were six focus groups with four people. Interviews were carried out in six sessions at the schools where the participants were working. With the permission of the participants the interviews were recorded. Figure 2 presents the interview duration and date of each interview.

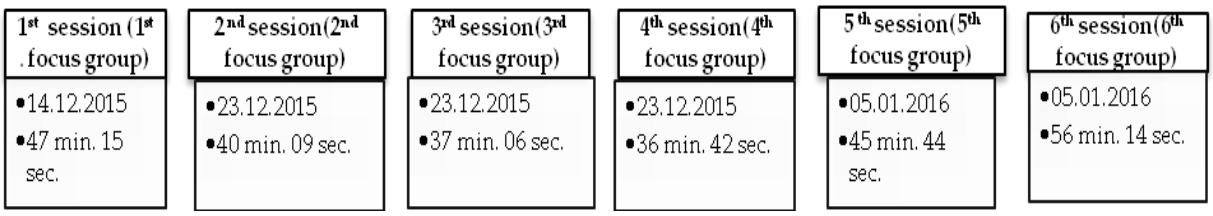

Figure 2. Interview duration and date of each focus group interview

Data analysis

The data obtained were examined through content analysis. Content analysis allows for in-depth analysis of the data and for reaching related concepts and themes. The analysis consisted of the following steps: coding the data, developing themes related to the codes, organizing and describing data based on codes and themes, and interpreting findings (Yıldırım and Şimşek, 2013). The interviews recorded were transcribed by the authors. The text was coded by the authors independently. The interrelated codes were categorized according to their similarities and differences. The researchers decided under which sub-themes the data were gathered and presented. Then, through combining these, sub-themes which were correlated with each other, were placed on main themes presented in broader dimensions. Consistency between the codes created by two researchers was calculated using the formulation:[Agreement/(Agreement + Disagreement) x 100] (Miles and Huberman, 1994). Accordingly, the reliability of the study was found out to be 0.97. The findings are given with the direct quotations from the statements of the participants.

Results

As stated earlier, the study aims at identifying the views of the science teachers and classroom teachers about life skills. The analysis provided nine categories of themes about the findings, each of which are given as follows. Table 6 provides these themes and subthemes.

Table 6. Themes and subthemes about the views of the participants concerning life skills

Themes	Subthemes
Definition of life skills	Ability to maintain quality life Coping with difficulties Transforming learning into acts
Life skills to be acquired by individuals	Decision making and critical thinking skills Communication and interpersonal skills Coping and self-management skills
Significance of having life skills	Quality people Quality society
Science education program in improving life skills	Positive views Negative views
Activities and sources for life skills	Classroom activities Other activities Sources
Teachers in the acquisition of life skills	Personal roles Professional roles
Teachers in the acquisition of life skills	Competency
Problems related to the acquisition of life skills	Parents Teachers Educational program Educational system School management Student Society
Solutions and expectations	Teachers and parents Student Program, school and educational system

Findings about the definition of life skills

The findings showed that there are three subthemes related to the theme of the life skills definition: "*Ability to maintain quality life*", "*coping with difficulties*" and "*transforming learning into acts*". The categories related to these subthemes are given in Table 7.

Table 7. Subthemes about the life skills definitions and related categories

Theme	Subthemes	Categories
Definition of life skills	Ability to maintain quality life	Socialization Developing goals
	Coping with difficulties	Problem solving Entrepreneurship Critical thinking
	Transforming learning into acts	Informed acts Conscious acts Observations Search

As can be seen in Table 7 the participants defined life skills as an ability to maintain quality life, as skills to coping with difficulties and as skills to transform learning into acts to be used in daily life. Of these three definitions, those defined life skills as an ability to maintain quality life included efficient communication, self-reliance, expressing one's own ideas, socialization, efficient time management, having values, living in a planned way, setting goals and empathy-related skills. One of the participants stated "*I think individuals should have certain skills to improve the quality of their life. Socialization is another need for individuals. Unsocial individuals lack certain skills. They could have quality life. For example, critical thinking may help us in daily life related to consuming goods and developing ideas. For instance, skills such as entrepreneurship are needed to have quality life*."

Some of the participants defined life skills as having an ability to solve the problems they come across. It included the skills concerning problem solving, decision making, entrepreneurship, critical thinking and research. One of the participants who produced this definition, Mesut, reported "*life skills can be defined as those with which students need to solve the problems in their daily life.*". Another one, Yonca, pointed out "*..(these skills) refer to generation of potential solutions when any problem occurs."*

There were other participants who defined life skills as using the learning in daily life. One of the participants, Kenan, stated "*They should apply what they learned in the course in daily life. In other words, they should relate their learning to daily life."* and another one, Reyyan, reported "*Students with life skills are conscious, informed, can make search and observation and set goals as well try to achieve his goals."*

Findings about life skills to be acquired by individuals

The theme of life skills to be acquired by individuals was discussed by the participants under three subthemes: "Decision making and critical thinking skills", "communication and interpersonal skills" and "coping and self-management skills". The categories related to these subthemes are given in Table 8.

Table 8. Necessary life skills for individuals

Theme	Subthemes	Category
Life skills to be acquired by individuals	Decision making and critical thinking skills	Problem solving Decision making Critical thinking
	Communication and interpersonal skills	Communication Empathy Cooperation and teamwork Entrepreneurship
	Coping and self-management skills	Self-reliance Managing stress

As can be seen in Table 8, the participants provided three subthemes related to life skills to be acquired by individuals: "decision making and critical thinking skills", "communication and interpersonal skills" and "coping and self-management skills". For them, thinking skills that are concerned with life skills included problem solving, decision making and critical thinking. One of the participants, Mesut, stated "*Life skills, as mentioned in science courses, include decision making, science course focuses on socialization and applicable topics";* another one, Halil, reported *"Life skills remind me of critical thinking. For me the ability to eat and drink is also a life skill. For instance, how can we feed ourselves in a healthy way? While teaching such topics in science courses we emphasize critical thinking"*; and another participant, Sema, argued *"We would like produce those individuals who can solve problems. It is one of our basic goals in courses. Students should generate solutions and should not be those who cannot solve problems."*

There were other participants who regarded communication and interpersonal skills as part of life skills. For instance, Banu, stated *"As part of society people should have good relations with other people. I think that people should have effective communicative skills to this end."* Mete, stated*"when students have problems with their friends in classroom they should take into considerations the perspectives of their friends. Therefore, I attach importance to my students' empathy skills."* Gamze, stated *"for instance, in science course I employed collaborative teaching strategy in laboratory studies about power and movement in order to reinforce team work skills of students."* Funda, stated *"I guide my students in reinforcing their entrepreneurship skills. For instance, they can tell their desires to school administrators. Or they can work with senior students in student clubs."*

Some participants argued that certain coping and self-management skills such as self-reliance and managing stress are part of life skills. For instance, Gül stated "*self-reliance, he must express his own ideas. Children may be very successful in the course, but they may lack self-confidence*." Fuat stated "*as you know our education system is examination-oriented. Therefore, we should reduce their anxiety about exams. Thus, they can be more successful if they learn to cope with this stressor."*

Significance of having life skills

The findings showed that the participants produced two subthemes related to the theme of the significance of life skills: quality people and quality society. Table 9 presents the categories related to these subthemes.

Table 9. Significance of having life skills

Theme	Subthemes	Categories
Significance of having life skills	Quality people	Lifelong learning Assuming responsibility Survive Quality life Happy life
	Quality society	Societal development Interpersonal communication

As can be seen in Table 9, the participants reported that the significance of having life skills is about both quality people and quality society. In other words, for them having life skills leads to quality life for individuals and to quality society. It can be argued that those individuals with life skills have acquired the skills concerning life long learning, survival, assuming responsibility, setting goals and decisions making.

Yonca emphasized the importance being individuals who learn throughout life and who are responsible citizens and said "in the classes we emphasize that they should be open to learn weverytime. They will assume responsibility of their learning in this way." Kemal stated that those individuals with life skills can survive and live a quality life and reported "students should solve daily life problems using the information they learned in science courses. It helps them in surviving and in having a happy and quality life." One of the participants who also reported this view, Harun, pointed out "Thirty years ago companies looked for those people who had good command of foreign languages and a successful undergraduate education. However, now companies are looking for those who have good communication skills, problem solving skills. Previously being a graduate of the physics engineering department of a good university was enough to find a job in Turkey or abroad. It is not true now. Although these are prerequisites, they should be additional qualifications such as problem solving skills, communication skill, and entrepreneurship."

The participants also stated that those individuals with life skills contribute to societal development and to interpersonal communication. For instance, Mesut pointed out "*If children do not acquire life skills at home they cannot adapt to society. Therefore, they may have problems in communication, decision making. In fact, any children lacking these skills cannot be successful at secondary school, become introverted and cannot be active in the learning process. Therefore, teaching life skills in science courses is very significant for individuals to have healthy social relationships*".

Findings about the role of science education programs in improving life skills

About the theme of the role of science education program in improving life skills two subthemes, namely positive views and negative views, appeared. The categories related to these subthemes are given in Table 10.

Table 10. Role of science education program in improving life skills

Theme	Subthemes	Categories
Science education program	Positive views	Spirality Connections to daily life Extracurricular activities Improving the skills to make search Directing to primary sources
	Negative views	Information overload Examinations Intense gains

Time constraints

As can be seen in Table 10 the participants developed two subthemes with regard to the role of science education program in improving life skills. the majority of the participants regarded the new science education program as positive and efficient in terms of the acquisition of life skills due to the fact that the program has a spiral nature, has gains related to daily life is supported by extracurricular activities, among others. One of the participants, Tayfun, reported "*in science courses some topics are repeated. In a sense this repetitive pattern helps students to understand the topics better and to acquire the desired skills."*

Focusing on the efficiency of the program in terms of connections to daily life, Ümay argued "the program is really nice. It covers numerous interesting science topics. For instance, how things move, how a magnet attracts objects.".

Focusing on extracurricular activities included in the program, İlker stated"There are extracurricular activities about entrepreneurship. At the end of each unit, there is either an assignment or project work or an activity which requires students to produce something. Therefore, the science education program is really good."

Reyyan reported that the program is very proper in terms of improving the skill to conduct research and of directing students to primary sources and her views are given as follows: "*the program is very nice, since it has a goal of gaining the skill to conduct research. Students may visit physicians, medical institutions or talk to their parent to for information search. Teachers now do not give them all information."*

On the other hand, there were other participants who had some negative views about the program in terms of improving life skills. For them, the major problems are as follows: the program is still based on information provision, it still deals with preparing students for examinations and time constraints. Stating that the program covers many topics which should be delivered in a limited time period, Dilber argued "*Although the science education program has a goal of teaching life skills to students there are serious problems in practice. We try to prepare students for examinations. Therefore, it is very hard to focus on teaching of life skills. Unfortunately, the education system heavily focuses on examinations. I would like to deliver science topic in a more flexible way, but it is not possible due to time constraints."* Another participant, Kenan, pointed out "*Now we are following the revised science education program for the grades of 5, 6 and 7, that for the eight grade will be modified next year. For me the revised science program is still full of intensive topics. On the other hand, students are mostly studying for tests for TEOG, then how we can show students that science is life?*."

Findings about activites and sources regarding life skills

Regarding the theme of activities and sources about life sciences, the participants produced three subthemes: "classroom activities", "extracurricular activities" and "sources". The categories related to these subthemes are given in Table 11.

Table 11. Activities and sources related to life skills

Theme	Subtheme	Category
Activities and sources	Classroom activities	Team work Experiments Relations with daily life Giving examples form experiences
	Extra curricular activities	Interviews Research and project work Visits

Sources	Official institutions Visits by specialists Technology

As can be seen in Table 12, the participants reported that they mostly make use of teaching activities, extracurricular activities, visits and various sources such as to teach life skills. Regarding teaching activities about life skills they employed experiments, relating topics with daily life, peer education, demonstrating and doing, team work, examples from experiences and drama.

For instance, Furkan reported *"I employ team work in activities to improve their life skills. For instance, in science courses, they designed materials related to a gain through cooperative learning method."*

In regard to using experiments and using daily life topics, he further stated *"We try to make experiments. I want them to observe experiments. We have iron balls. I use them to teach them the effect of these balls on soil based on the length of fall. They can observe the amount of potential energy. Regarding kinetic energy, the temperature of ice does not change and they can observe it using thermometers."*

One of the participants, Kenan, reported that he employed the examples from significant figures: *When Aziz Sancar was awarded Nobel Prize in chemistry a few months ago, the student interest in our course increased. His studies about structural damages in DNA and the cure of cancer attracted student interest. They asked many questions about these topics. I told them that they can also be like him if they study hard. Aziz Sancar became a good model. What Aziz Sancar did is an example of life skills."*

The participants reported that they realized extracurricular activities through interviews, project work and visits. Concerning interviews, the students were reported to talk to various professionals such as physicians, veterinarians, academics. For instance, Sema stated "*there was an assignment to conduct an interview with a person who is experiencing kidney disease. One of the students conducted an interview with his aunt who was experiencing it and it was very nice.*" Another participant, Mesut, reported "*I assigned them a homework regarding asthma. They conducted a project with the assistance of related institutions and presented their work to the class. I think this assignment reinforced their entrepreneurship skills. More specifically, they improved the skills about how to talk to a person and how to ask questions. Then in the course, I organized activities to improve their critical thinking skills and creative thinking skills through brainstorming."* Another participant, Kenan, stated "*I used an activity about body mass index and each student found the body mass index of their family members. They also developed graphics using these indices and presented their work to the class*." In addition, the participants reported to employing visits as an extracurricular activity to improve the life skills of students. The students visited with their teachers the following institutions: Solid Waste Center, Health Center, Meteorology, universities, Factory. For instance, Kamuran stated "*We visited various institutions. With the seventh grade students we visited a solid waste center. Education may help students, to avoid wasting water and natural sources. They learned how waste water was cleaned, increasing their sensitivity."* Another participant, Reyyan, stated *"We visited a science laboratory at the university, it attracted their interest. We also visited local medical center and meteorology. We visited meteorology in relation to the topic of climate. This visit made it possible for them to observe the measurement of weather conditions."*

The participants regarded the use of sources to improve life skills as using institutions, using technology and as inviting specialists. Institutions used by the participants as sources included medical centers, fire departments, forestry departments, meteorology and civil defense units. For instance, Mesut told *"Last year I used materials produced by TEMA in the activities to show students living being and to improve their environmental sensitivity*." Another participant, İlker, stated "*We need trees to use in the activity of tree planting. We applied for the forestry department to plant trees*." Oğulcan stated "*We went to local medical center while teaching blood groups to learn their blood groups*."

There were a few participants who invited specialists to the classroom. They mostly invited physicians, academics and dentists. One of the participants, Bahadır told "*Regarding health-related topics, I invited a physician. He gave students information. We also invited the mayor to provide information about local governments. The students asked many questions to these people."*

Some of the participants reported that they were using educational websites. It was found that such websites used by the participants to watch videos, animations and to use visuals, test items and experiments. For instance, Gül pointed out "*I try to frequently use* educational websites. *It includes very useful videos, experiments and visuals about the science education program. These tools tell about daily life using various examples. The students like it very much."*

Findings about the role of teachers in the acquisition of life skills

Concerning the theme of the roles of teachers in the acquisition of life skills, the participants developed three subthemes: "personal characteristics", "professional roles" and "competency". The categories of these subthemes are given in Table 12.

Table 12. Role of teachers in the acquisition of life skills

Themes	Subthemes	Categories
Role of teachers in the acquisition of life skills	Personal characteristics	Modeling
		Self-development
		Being open to new ideas
	Professional roles	Guidance
		Using various activities
		Assigning responsibility
		Improving students' problem-solving skills
		Using collaborative activities
		Organizing visits
		Making connections with daily life

Table 12 shows that the roles of teachers in the acquisition of life skills by students are categorized into two subthemes: "personal characteristics" and "professional roles". The participants argued that teachers should be models for students regarding life skills, including critical thinking, awareness and sensitivity about health-care and environmental protection, paying importance to recycling. Teachers should also improve their potential (through reading books and articles, having graduate education). Stating that teachers should be role models for students, Reyyan told "*We are leaders and models for our students. So, we should have life skills before trying to improve the life skills of students. In order to improve life skills of students, we should introduce them problems. Therefore, they learn to solve the problems. It is also useful for them in their daily life.*" Another participant, Sema, argued "*We should be models for students. For instance I focus on recycling. They all know that I am very sensitive about it. I always put waste paper in recycling boxes. I also direct them to do the same. I always advise them to have breakfast before coming school. In this way, I am trying to be a model for them."* In order to improve their life skills, teachers should read articles about novel teaching methods and approaches, educational sciences and should update their knowledge base through graduate studies. For instance, Halil said "*Teachers should avoid monotonous activities. In-service training activities can be designed to motivate teachers. Teachers should read articles or books about educational sciences and classroom teaching. It is certain that teachers should develop themselves and update their knowledge."*

The participants also reported that professional roles of teachers were also significant in terms of the acquisition of life skills of students. Such professional roles of teachers included guidance, using various activities, assigning responsibility, using collaborative activities, cooperation with parents, organizing visits, making connections with daily life and. The participants also argued that in order to improve life skills of students, teachers should employ cooperative activities, various in class and extracurricular activities, visits.

One of the participants, İlker, told "*Life skills should not be developed by children themselves, they must be formally taught. Therefore, teachers should guide the work of students and improve students' sense of responsibility through assignments and homework."* and therefore, emphasized the significant roles of teachers in guiding, providing variety of activities and giving responsibilities to students in teaching life skills.

One of the participants, Dilara, argued "*In fact, teaching methods are also significant for the acquisition of life skills such as team work and collaborative study. Students work together and understand the significance of team work, peer education and communicative skills. When a student come across a problem, he/she makes use of several life skills such as decision making, making analysis and synthesis. We ask a question and student groups try to find a solution for it. In this practice, students' life skills are used."* Thus, she emphasized the significance of using different teaching methods and of students involvement in collaborative activities in problem-solving process.

Arguing that topics should be related to daily life Gamze pointed out "*relating the topics studies to daily shows students that everything in daily life is part of science. So teachers should relate topics to daily life*."

Findings about the competency of teachers in the acquisition of life skills

Concerning the theme of the competency of teachers in the acquisition of life skills, the participants developed one subtheme: "competency". The categories of these subthemes are given in Table 13.

Table 13. Competency of teachers in the acquisition of life skills

Themes	Subtheme	Categories
Competency of teachers in the acquisition of life skills	Competency	Not having life skills Not developing himself Lack of necessary information and skills to improve students' skills Deficient information about the education program

In improving life skills of students, teachers have many roles to play. However, teachers should have certain qualities to achieve these roles. Table 13 shows that the participants reported that teachers themselves did not have certain life skills, couldn't develop their potential, lacked necessary information and skills needed to improve the life skills of students and lacked of information about the science education program. Concerning these points, Halil argued *"I think we should think in a critical way in order to reinforce critical thinking skills of students. I think teachers themselves are not ready for critical thinking. Because we were not raised in consistent with life skills. For me first, teachers should be trained about life skills. For instance, critical thinking skills are taught to students and when a student criticizes a teacher, the teacher does not give them an opportunity to express his views. Instead, teachers try to silence students. So there is a gap between teaching and the acts of teachers. In order to implement the program fully, first, teachers should be trained."*

Findings about the problems in improving life skills

The analysis showed that the participants produced seven subthemes concerning the theme of problems in improving life skills. The categories related to these subthemes are given in Table 14.

Table 14. Problems in improving life skills

Theme	Subthemes	Categories
Problems in improving life skills	Teacher	Information-based teaching Lack of necessary skills Using monotone activities Lack of information to improve skills
	Educational program	Overload in terms of topics to be covered Time constraints
	Educational system	Exam-based Quality of textbooks
	School	Disallowance by school management Crowded classrooms Insufficient laboratories
	Parents	Being extremely protective Being extremely oppressive
	Students	Settings Lack of self-confidence Playing computer games Lack of communication
	Society	Modeling undesired behavior

Table 14 indicates that the problems in improving life skills reported by the participants are about teachers, education programs, parents, educational systems, schools, students and society. For the participants, the problems related to teachers occurred due to extensive information transfer in courses, monotonous activities, teachers' lack of necessary information about how to improve these skills. Direct quotations are not given here, since the related quotations are given above. The participants argued that the program was very intensive and there was nor enough for achieving the stated gains. Direct quotations are not given here, since the related quotations are given above.

The other problem reported by the participants about the educational system which was regarded by them as exam-oriented. They were told that they could not carry out activities to improve children's life skills; instead, they had to deliver information and to solve test items together with students. Stating that she could not use experiments in the courses, Sema told "*Children have many expectations from science course. They think that they will do experiments in the courses. In the fifth grade, they partly deal with experiments. Because topics are proper for it. But during the grades of 6, 7, and 8, we experience pressure to complete the program so that experiments cannot be done. So the course becomes less attractive for students."* On the other hand, Kamuran said *"TEOG limits teaching. Because it is a twenty-minute examination that determines the future of students. In this examination, there are less items about experiments. So in the courses we focus on theoretical information and we can conduct less experiments*." On the other hand, some participants had complaints about textbooks. For instance, Kenan argued "*textbooks are getting worse, there are errors in the books and the system is not correct. Science textbooks have many errors. In short, there are serious problems."* Some participants reported that school management did not allow for visits. They also mentioned crowded classes and a lack of laboratories as problems. For instance, Mesut said *"In regard to extracurricular activities we experience time constraints and if we visit somewhere we could find a proper vehicle. Sometimes school management does not give permission for visits. We need to take permission from parents and from local education departments. Such procedures can be much easier and visits can be increased. In turn, it will improve student achievement."* Focusing on crowded classrooms Dilber stated *"I want to use those activities which require active student participation, since they should learn by doing. But the class is very crowded."*

Some participants argued that parents' child rearing styles were also asignificant problem in improving life skills. In short, both protective parents and oppressive parents were thought to create significant barriers for children to develop life skills. Stating that oppressive parents had negative effects on children, Halil claimed "*We experience numerous problems due to child rearing styles of*

parents. Children are told by parents not to talk. I am teaching the fourth grade and I have been teaching these students for two years. They have just begun to talk in the courses before they did not talk. When I asked why they did not bring the textbook, they did not give any answer. In this year, they begin to talk and to defend their rights." Banu argued that extremely protective parents led to low levels of self-confidence in students and further said *"Such parents extremely protect the child. They intervene everything and solve all problems. Therefore, the child cannot express their views and he even cannot go to canteen to buy a bottle of water and go to outside."*

One of the problems inhibiting life skills was found to be family settings. For instance, İlker argued "*I was raised in a village under very oppressive conditions. Children are mostly introverted, cannot express their views, cannot defend their rights. Because they were not given an opportunity to express their views. When they tried to do so, they were silenced by parents. When I asked questions, they were scared and could not tell the answer because they were afraid of doing something wrong."* Regarding extremely protective family settings Furkan stated "*My students have not had any difficulty in their life. They are given everything that they want, so they do not need to think creatively*." Playing computer games all the time was also given as a reason for a lack of communicative skills. For instance, Ali said "*When we were children, we had friends in our neighborhood. Now children do not go outside and they always play computer games. They do not interact with other people. Then they have communication problems."*

*T*he participants argued that negative or undesired behaviors seen in society have negative effects on children. For instance, Harun stated "*Students see quarrel in daily life and while on the bus they see that the driver does not follow traffic rules. They also see that the driver swears. Allof these undesired acts shape the concept of life skills for children and they develop these skills based on such examples."*

Findings about solutions for the problems in improving life skills

Concerning the theme of solutions for the problems in improving life skills, it was found that the participants provided three subthemes of "teachers and parents", "educational program, school and educational system", and "students". Categories of these subthemes are given in Table 14.

Table 14. Solutions for the problems in improving life skills

Theme	Sub theme	Category
Solutions	Teachers and parents	Creating positive classroom environment Team work Creative drama Cooperation with parents
	Students	Peer education Team work Encouragement Improving entrepreneurship skills Assigning research-based work Assigning responsibility
	Science education program, school and educational system	Increasing class hour Improving textbook quality Reducing the number of gains Increasing the number of equipment Reducing student number Having enough materials at school

As can be seen in Table 14, the participants reported to that they could reduce the problems in improving life skills by creating positive classroom atmospheres, using group work to improve cooperation and communication and creative theatre, skills to improve students' affective skills and frequent communication with parents. For instance, İlker, who supported positive classroom

atmosphere and group studies, reported "*I am trying to reduce their shyness. When they cannot achieve anything, I encourage them to repeat it. I also encourage them to talk. I am trying to creative a positive classroom atmosphere to make students relaxed. The most serious barrier for creativity is tense and restless students. They should be comfortable. I form groups of students with different abilities*." Halil, who employed drama, reported "*I frequently use creative* theatre*. I asked students to bring materials for a creative drama. In the science courses we do not just give information through lectures. They present the activities using creative* theatre *to the class. Students themselves form the groups, I never intervene this process. Now all students take part in creative drama activities."* Stating that he was in regular interaction with his parents, Furkan told "*I generally prefer to solve problems through meeting with parents. We can easily solve problems together. I guide them. I inform them about child development."*

The participants reported they tried to overcome student-related problems through peer education, team work, encouraging of students to talk, and improving of their sense of responsibility. One of the participants, Kemal, stated "*I employ group work to improve students' self-confidence. They work together and they learn something from one another and they communicate with each other. They better learn some skills better from their peers.* Another participant Ziya told "*I frequently assign them homework which requires conducting research and they present their work to the class in order to improve their public speaking skills and responsibility."*

Major problems reported by the participants due to educational programs, schools and education systems were mostly concerned with class hour, textbooks quality, the number of gains, lack of necessary equipment, crowded classes. For instance, Kenan suggested "*class hour should be increased. There must be more laboratories at schools. Although we can make experiments using materials which children bring from home, they like to make experiments in laboratories. We have some problems about textbooks. Textbooks should be chosen by teachers."* Another participant, Gamze, argued *"If classes are not crowded and we have all necessary equipment in the classroom, it will be useful for children."*

Discussion

The participants defined life skills under three categories: "The ability to maintain quality life", "coping with difficulties" and "transforming learning into acts". Baysal (2015) argued that information learned could only be valuable when it becomes a skill. Otherwise, it does not have any significance for students. On the other hand, transforming information into skills requires many processes. First, information should be related to a situation at hand, it should be adapted to the conditions of that situation and should be internalized. Özdemir (2015) found that some science teachers regarded life skills as science literacy and the other teachers regarded life skills as skills which facilitate daily life, making it possible for individuals to cope with daily problems and to be successful in their social life. CCert (2014) analyzed the perceptions, competency and attitudes of teachers and parents about life skills education. It was found that for teachers' life skills were not valuable and in-service training activities were needed to train teachers to enable them available to effectively teach life skills.

The participants reported that those individuals having life skills are ones who have acquired decision making and critical thinking skills such as problem solving, decision making and critical thinking; communication and interpersonal skills including communication, empathy responsibility, cooperation and teamwork; coping and self-management skills such as self-reliance and managing stress. They claimed that such individuals will have quallified life and contribute to the improvement of society. Güneş (2012) claimed that those individuals with critical thinking skills can develop different perspectives regarding their professional responsibility and can make independent decisions and can the ability to behave objectively under social pressure. Similarly, Tillman (1997) stated that indiviuals with life skills have many advantages regarding the development of creative thinking skills.

Kalanda (2010) argued that life skills are very significant in that they make it possible for students to cope with daily life problems.

Concerning the views of the participants regarding the properness of the science education program in the acquisition of life skills were mostly positive, but some participants had negative views and reported that there were some problems in this respect. Those who had positive views stated that the program had spirality and gains which required connections with daily life and that it supported for extracurricular activities, among the others. In addition, the participants paid importance to the positive sides of the programs, including the contents which were about making research and about the use of the primary sources. Similarly, Karaman ve Karaman (2016) found that for science teachers the science course program dated 2013 is much more daha plain and understandable and is based on activities and inquiry. Prinsloo (2007), maintained that when teachers do not act as role models for students, the efficiency of life-based programs is at the minimal level.

The participants also reported some negative views about the science education program. These negative points include its focus on knowledge, excessive focus on gains, less time allocated for gains and focus on examinations rather than life skills. Özdemir (2015) identified the views of science teachers about life skills. In this study the participants mostly had positive views about the science program in terms of the acquisition of life skills. They thought that the revised program was much more plain and covered enough number of gains. However, some participants argued that these positive points are not enough, and that schools should be financially supported. CCert (2014) maintained that the educational programs which aim to improve life skills should take into consideration the cultural features of societies.

In the current study, it was found that the participants used some in class and extracurricular activities to teach life skills. In class activities used included team work, experiments, relations with daily life and giving examples form experiences. Extracurricular activities reported were interviews, visits and project work. The visited institutions included solid center, medical center, and meteorology. It is also found that the participants employed some sources in reinforcing life skills, including official institutions, specialists and technology. Some participants reported use of educational websites. Roselyne (2014) argued that life skills should be acquired in schools beginning at an early age through both in class activities and extracurricular activities. Therefore, students should be given an opportunity to acquire life skills at an early age.

The participants reported that teachers played a significant role in the process of acquiring life skills. However, in order to achieve this role, teachers were reported to have certain personal characteristics such as modeling, self-development and being open to new ideas. The participants also reported that professional roles of teachers were also significant in terms of the acquisition of life skills of students. The participants also reported that professional roles of teachers were also significant in terms of the acquisition of life skills of students. Such professional roles of teachers included guidance, using various activities, assigning responsibility, using collaborative activities, organizing visits, making connections with daily life and improving students' problem-solving skills. They argued that teachers themselves did not have life skills, did not develop their potential, and lack of necessary information and skills. Baysal (2015) stated that teachers should think based on questioning, transform their knowledge base, and try to improve their skills. In short, they should focus on skills as well as on information. Similarly, Parthsarathy, Renjith and Shobitha (2009) stated that teachers have very significant roles in improving students' life skills. Chirva and Naido (2014) argued that students' life skills need to be reinforced by appropriate professional behavior by teachers to develop these skills at the desired level.

The participants reported that there are some problems in improving the life skills of students. The problems in improving life skills were reported by the participants were about teachers, education program, parents, educational system, school, students and society. For the participants, the problems related to teachers occurred Information-based teaching, lack of necessary skills, using monotone activities and lack of information. The participants argued that the program was very intensive and

time was insufficient for achieving the stated gains. The participants reported that oppressive or protective child rearing styles were significant barriers in improving life skills. Child rearing in such environments generally leads to the lack of self-confidence, responsibility, and communication skills. Chien, Harbin, Goldhagen, Lippman and Walker (2012) concluded that for children of low from low socio-economic families, it is much harder to acquire life skills in contrast to those from medium socio-economic status families. In addition, teachers reported that they experienced problems due to lack of communication with parents and to a lack of their support. Research suggests that parents have an influential role in the level of children's life skills (Sharma, 2003; CCert, 2014, Chirva & Naido, 2014; Parvathy and Renjith, 2015). The other problem reported by the participants about the educational system which was regarded by them as exam-oriented. They expressed that they could not carry out activities to improve children's life skills, instead, they had to deliver information and to solve test items together with students. In a study conductud by Köstereliođlu and Bayar (2014), it was reported by teachers that the Turkish education system is exam-oriented rather than the student-centered education system which will give the students various skills.

The participants reported to reduce the problems in improving life skills through creating positive classroom atmosphere, team work, creative drama to improve students' affective skills and frequent communication with parents. The participants reported they tried to overcome student-related problems through peer education, team work, improving entrepreneurship skills, assigning research-based work, encouraging students to talk, and improvement of their sense of responsibility. In order to overcome the problems due to educational program, school and education system, the participants suggested the increasing class hour and equipment, improving textbook quality, reducing the number of gains and having rich materials at school. James (2010) stated that teachers may organize many activities to improve life skills of students, so teachers have a significant role in this process. It seems that teachers play a significant role in the acquisition of life skills.

Conclusion

In the study which aimed at identifying the views of classroom and science teachers about life sciences, the views of the participants revealed concerning activities and sources used to improve life skills, the problems, the role of teachers and the competency of the science education program.

In the basic education program developed based on constructive approach life skills are given great importance. In such educational programs there are several skills to be acquired by students (research, problem solving, entrepreneurship, effective communication, creative thinking, critical thinking). Although educational programs cover life skills, the activities by teachers play a significant role in acquiring life skills. Therefore, in the study the views of classroom and science teachers about life skills were examined. The findings indicate that the participants defined life skills different from the definitions given in the related sources. It was also found that the participants were aware of the significance of life skills for students and that they carried sout many activities to reinforce life skills in students. In science course they used collaborative activities, experiments, research and projects, visits to institutions as well as specialists and technology. These activities are significant in improving students' life skills.

The participants reported that individuals should have decision making and critical thinking skills, communication and interpersonal skills and coping and self-management skills and that only such individuals can contribute to the creation of a quality society.

The participants stated that teachers play a significant role in improving life skills of students and that they have certain personal and professional roles in this regard. However, they did not concern themselves competent in reinforcing life skills, indicating that their information was not enough.

The major problems related to teaching of life skills expressed by the participants included educational program, education system, school administration and families. They developed some solution concerning these problems.

Suggestions

Based on the findings of the study the following suggestions are developed:

- Given that education can produce individuals with life skills, educational programs should address these skills.
- Activity booklets should be developed to be used in teaching of life skills.
- Several projects can be developed in corporation with families, schools and society to produce individuals with life skills.
- In-service training activities can be carried out to improve teachers' information and skills concerning life skills.
- Teacher training programs should also contain activities to improve pre-service teachers' information and skills concerning life skills.

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