Abstract: This paper’s purpose is to study the metaphors students construct in Life Sciences lessons. In the study, data were obtained coincidentally from 226 limited number of 3rd grade students from 3 different schools in Çanakkale city center. In the study, students were asked to write an essay on their opinions on Life Sciences lesson and to complete the sentences such as “The life sciences lesson is like a ……, for me, because ……” . The data were analysed with content analysis technique and at the end of this analysis 159 meaningful metaphor structure were found . Metaphorical statements that are gathered in a 11 different sub-categories were reduced to 4 different categories with a second classification. In conclusion, it is found that students get the initial content of Life Sciences lesson.

Key words: metaphor, life sciences, content analysis

1. CONCEPTUAL FRAMEWORK

Metaphor is the vehicle that we use unconsciously to Express ourselves better in all areas of life. Metaphor is seen as a strong cognitive mapping and modelling mechanism which aims individuals’ understanding of world around them (Arslan and Bayrakçı, 2006. p.103). They are assimilations that we use in order to state what we desire or structure and code information from known to unknown and concrete to abstract through building relationships between receiver-resource. Basically and briefly it is to express the unknown by the means of known one and by this way of expression different identifications were used about this cognitive vehicle that shapes and give meaning to our initial thoughts. For example, Lackoff and Johnson (2005. p.27) state that the essence of metaphor is understanding and experiencing a type of item according to something else. For Saban (2008. p.424) metaphor occurs by stating implicitly or explicitly that X item is like Y item. Metaphor is an analytic vehicle that works cognitively in teaching
new information, content or actions (Ortony 1993, cited in; Mahlios and Maxson, 1998) in addition to this it is used in order to frame and identify the experience for achieving one’s understanding of life and lies on the basis of individuals’ awareness (Hardcastle et al 1985; Yamamato et al 1990, Mahlios and Maxson 1998).

The metaphors which are especially used to make schema of the ideas, items or thoughts of individuals, work as the feedback between the receiver-source in the education framework. In this context, in any metaphor relationship, it can be said that the source of the metaphor works as a filter in understanding and explaining the subject of the metaphor with a different kind of view (Saban; 2004. p.132).

The metaphors which seen as the basis of meaningful learning, enables easy learning since it embodies the abstract concepts. It is known that the feeling that an information or concept make you feel by turning into different subtexts with the wide imagine-world of receiver, build new kind of information. This situation make the long-term storage in memory work. Especially while explaining the unknown through the known ones requires background, metaphors are defined as the ‘language of experience’ for the reason that they give meaning to the individuals own experiences (Miller, 1987; cited in Saban 2004).

The information stored in individuals are restructured along the marks on the brain and all the information reshaped by being contrasted with the previous ones. Because of this, metaphors of educational area are really important for the individuals to understand themselves and for teachers to understand their students, and the effectiveness of the teaching process. According to Yob (2003), metaphor is a strong cognitive vehicle that an individual can make work to understand and explain a highly abstract,
complex or conceptual item (cited in; Güven 2008). In any metaphor relationship at least 3 basic element are needed to be stated (Forceville, 2002, cited in Saban 2004).

These 3 basics are given like this;
1. The subject of metaphor
2. the source of metaphor
3. from source of the metaphor to the subject of the metaphor.

Especially recent years in Turkey the number of metaphor researches on how concepts are structured in educational area have increased and the affect examination during the learning and teaching process has been studied (Güven 2008, Saban 2004, 2008)

In this study, the metaphors that students establish in the Life Sciences lesson which has been given as the touchstone lesson on 1st grade of elementary school for years, were tried to be examined. Life sciences lesson which is defined as the process of building relation on evidences of natural and social facts and the knowledge which is obtained after this process is being studied in 1st, 2nd, and 3th grades of elementary school (Sönmez, 1998, p.2). The students who have this classes see the life as a whole. For this reason the lessons different but all related to the social sciences, are not separated as a discipline, being a resultant of both these and art, modern thinking and values, life sciences lesson is studied. (Sönmez 1999, cited in; Güven 2005).

Main goal of elementary school is to prepare children to life and to the upper grades. For reaching this goal life sciences lesson is the first lesson and for this reason as it is seen as the most important lesson in the very first
In 3 grades of elementary school it is accepted as the touchstone lesson (Akınoglu, 2003. p.2)

Touchstone has the meaning of center or axle in Turkish dictionary. It is the multiplication of values such as language, knowledge, clothings, food, music that we call culture. The affairs of humanbeings with nature and the knowledge obtained from society should be placed in the center. Because the mother of knowledge is the society and the nature. Life sciences lesson lets the turkish, math, drawing, music and sports lessons have more place. Life sciences lesson goes together with the lessons listed above (Güelryüz 2008. p.12-13). The themes ‘My school excitement, my only home, yesterday, today and tomorrow’ which are placed in the new Life sciences under the same name but with expanding objectives for 3 years. Taking into the relation of ‘From Near to Far’ princible account firstly, the opportunity of individuals’ exploring themselves and then exploring their family and finally getting to know their own identity’s past, today and future is given (Güelryüz, 2008. p.91)

The newly edited life sciences curriculum takes individual to the center and enables learning by exploring and fulfill students need to enjoy. Besides, it enables students to make comparisions in spite of presenting memorized information.

Briefly, in this paper, metaphors which are defined as structuring information and referring to the unknown through the known one, the life sciences curriculum which puts students to the center, helps to define close environment and prepeares students to the future and fullfill its duties, are wanted to be identified how these metaphors are formed.
2. METHOD

In this research qualitative method is used in order to define metaphors that children use in life sciences. Data analysis is applied with content analysis technique from qualitative research patterns. Qualitative research has theoretic basis which rely on various disciplines. Like sociology, anthropology, psychology, philosophy, linguistic disciplines have promoted not only viewpoint but also contributed methodically. (Bogdan and Biklen, 1992; Goetz and LeCompte, 1984; Patton, 1987 cited in Yıldırım, A. And Simsek, H; 2006. p.35). Within all this disciplines the main purpose is to fully understand human behaviour in their own environment. (Yıldırım, A. And Simsek, H; 2006. p.35).

Content analysis can be defined as a whole of some methodical tools and techniques that are applied to various discourses. First of all, tools and technics which are collected under the name “content analysis” can be qualified as controlled commentary and generally a deduction-based “reading” tool. “reading” in question relies on basis to analyse discourse pattern within defined limits (Bilgin, 2006. p.1).

2.1 Purpose of the Research
This research has been carried out in order to examine the metaphors which children has formed and relate them with life science.

2.2 Universe and Pattern
Research’s studying universe is formed by the students of Barbaros Hayrettin Paşa primary school, Omer Mart primary school and Mustafa Kemal primary school which are situated in the centre of Canakkale city.
2.3 Limitations

Research is limited by;

- The metaphors which first class students in primary school form in life sciences
- 2007-2008 education year
- Data gathered from 266 students.
- Because of the word limitations from 159 formed metaphors, the study is limited with 74 metaphors.

2.4. Collecting Datas

Firstly in this research, 266 students were asked to write a composition on what they think about life sciences and and to fill blank statements as “for me life sciences is like……….. because………………….”.

33 of 266 collected datas are not included in research because of the idea that they are not filled willingly or not filled at all.

2.5. Analysing Datas and Interpretations

159 meaningful metaphor forms are found in study datas and 74 metaphor forming efforts are not accepted because of the reasons like not building a relationship between target-source or not identifying target or source. Because same of the metaphors has got different meaning they are categorized and their meanings are given. Analysing datas are carried out like this (Saban 2008. p.428.);

1. Naming process
2. Eliminating and refining process
3. Gathering and developing category process
4. Obtainig validity and reliability process
**Naming process:** Formed metaphors are coded superficially by giving for each paper a que number.

**Eliminating and refining process:** Codded metaphors are revaluated within the view of 3 basic subject (subject, source and subject- source relation). 74 sheets are not included in the research because they are not accepted as they do not form a metaphor.

**Gathering and developing category process:** 159 metaphor forms which will be examined in research content are chosen with pattern metaphors in order to form a step for reliability and validity for further processes. The metaphors which students form about life sciences are categorised under 11 categories. This categories are “light”, “teacher”, “knowledge”, “family”, “behaviours”, “friends”, “communication tools”, “plant”, “environment-living”, “name of the lesson (life sciences)”, “main lesson”. After category forming process, these categories are coded under 4 different categories based on deduction method. These categories are “knowledge source”, “life diversity”, ”relating to life” and “relating towards life” and these are related to programm’s subject which basically the question of the research.

**Obtainig validity and reliability process:** The questions are answered through whether in content analysis validity condition has been supplemented or is there a harmony between research’s problems\aims and tools. There no other validity measuring tool accept category definings in content analyse (Gökce,2006. p.83). In this process every category’s meaning and metaphors are identified.
In order to supplement reliability condition the same researcher has examined categories with likely relations in different time by naming them again.

3. FINDINGS AND INTERPRETATIONS

In this research process, from applying process’s of content analyses, formed sub-categories process has been identified and sample metaphor forming processes has been given.

Category 1: Light
This category is done by 40 students and formed with 8 different metaphorical statement. These metaphors are stated as “bulb”, “sun”, “moon”, “star”, “brightness”, “candle”, “lamp”, “light”.

Common features of these metaphors are like this;
- With its context, life sciences has got a leading role in students life and brightening role about the unknown subjects. When the following statements which are related with this subject are examined this common feature will be better understood.

“Life sciences is like a bulb for me because as bulb brightens around life sciences brightens us, too.”
“Life sciences is like brightness because it takes us to the right way”.
“Life sciences is like a light because it prepares us to the future and it brightens our future”.
“Life sciences is like a sun because it gives us light as sun does.”
Category 2: Teacher

The metaphor in this category is formed just as “teacher” by 18 students.

The common feature of this metaphor is like this;

- Teacher is seen as an authority who knows everything, teaches everything and is a resource of the lesson. When sample sentences are examined this can be seen better.

“Life sciences is like a teacher for me because how teachers teach us life sciences give us new knowledge, too.”

“Life sciences is like a teacher because it teaches life as teacher does.”

Category 3: Knowledge

This category is done by 33 students and formed with 19 different metaphorical statement. These metaphors are stated as “book”, “knowledge”, “knowledge box”, “knowledge chest”, “cloth”, ansiklopedie”, “eraser”, “pensil case”, “Atatürk”, “knowledge library”, “brain”, “computer”, “calculator”, “sciences”, “harbor”, “snowball”, “cloud”, “map”, “fox”.

Common features of these metaphors are like this:

- Life sciences gives accurate knowledge just like computer, brain, library, map and when it is needed it gives limitless knowledge to the students to prepare them to life and it fills the knowledge gap. As a sample;
“Life sciences is like a cloth for me because as cloth surrounds our body life sciences surround our lack of knowledge and teach us knowledge that we do not know.”

“Life sciences is like a knowledge box because it teaches as a lot of things about life”

“Life sciences is like a computer because it gives every kind of information as I want just like a computer.”

“Life sciences is like a book because as we get information from books we can get information from life sciences, too.”

Category 4: Family
This category is done by 12 students and formed with 4 different metaphorical statement. These metaphors are stated as “mother”, “father”, “pharmacy”, “relative”.

The common feature of these metaphors are like this:
- From life with its teaching and defending side, life sciences has got a leading role for choosing the good and it states us the importance of the sharing things and the happiness of helping out.

“Life sciences is like a mother for me because like mothers life sciences teaches us important things like being helpful and love.”

“Life sciences is like a father for me because it teaches us sharing and love as father does.

Category 5: Conferring power
This category is done by 17 students and formed with 5 different metaphorical statement. These metaphors are stated as “atmosphere”, “oxygen”, “air”, “power”, “compass”.
Common features of these metaphors are like this;

- As the knowledge, ability which are learned from life sciences have got stability in students life and it has a pre-condition on learning new knowledge as students use them every moment in their lives.

“Life sciences is like an air for me because as air fills around life sciences fill us, too.”

“Life sciences is like oxygen because as we live on air we survive with life sciences, too.”

**Category 6: Behaviours**

This category is done by 27 students and formed with 10 different metaphorical statement. These metaphors are as “friend”, “game”, “life”, “people”, “chain”, “police”, “snake”, “money”, “crying person”, “respect tree”.

Common features of these metaphors are like this;

- One of the feature is that students learn new behaviours and rules from their observations and one-to-one stutaions they experience and they learn from life sciences what they should do in this stutaions.
- The other feature is that they state the lesson as the defender from bad things when behaved right and adequately.

“Life sciences is like a chain for me because it is a tool for handing life.”

“Life sciences is like a polis because by defending us from bad things it makes us ready for life as polis does.”
“Life sciences is like life lesson because its subjects are about life.”
“Life sciences is a game because it teaches us life as a game does.”

Category 7: Communication tool
This category is done by 10 students and formed with 5 different metaphorical statement. These are stated as “internet”, television”, “radio”, “newspaper”, “camel”.
Common features of these metaphors are like this;
- With communication tools even if they don’t experience themselves, by observing the other people’s life they learn new situations and with this context they gain new behaviours. Sample statements about this category is like this.

“Life sciences is like television because although they are the other’s lifes they inform us about different lifes.”
“Life sciences is a newspaper because in newspaper there are recent news and in life sciences there are recent news, too.”
“Life sciences is like a radio because we learn new informations from radio, too.”

Category 8: Plant
This category is done by 35 students and formed with 9 different metaphorical statement. The metaphors are stated as “daisy”, “flower”, “narcissus”, “water-melon”, “tree”, “violet”, “cactus”, “octopus”, “apple”.
Common features of these metaphors are like this;
- Life sciences subjects diversity and the conceptual richness is seen similar with plant’s leaves diversity and its usefulness. Sample statements about this category are like this.
“Life sciences is like a tree because when a tree grows it has more leaves and branches so life sciences is like this the more it develops the more it helps to the people and gets democratic.”

“Life sciences is like a cactus because if we don’t know how to touch to a cactus, it will hurt ourselves and if we don’t learn life science it will harm us, too.

Category 9: Environment
This category is done by 18 students and formed with 9 different metaphorical statement. These metaphors are stated as “education”, “world”, “environment”, “life”, “living”, “armor”, “vase”, “eye”, “blackboard”.

Common features of these metaphors are like this;
• As the subjects of the life sciences and the richness of the subjects are increasing, subsequently -related to life sciences- students can use them in their near environment. Sample statements about this category is like this.

“Life sciences is like life because when we look into the lesson all the situations are the same just as we have during our lives.”
“Life sciences is like environment because we can use our knowledge in the environment.”

Category 10: Relating with “life” name
This category is done by 15 students and formed with 2 different metaphorical statement. These metaphors are stated as “life”, “flag”.

Common features of these metaphors are;
• That it is well understood by students, life sciences is “life itself”.
  Sample statements about this category is like this.

“Life sciences is like a knowledge of life because it looks like meaning of life as it tells about life from different things.”
“Life sciences is like flag because the flag is ours and the life sciences is our life, too.”

Category 11 : Main subject
This category is done by 8 students and formed with 2 different metaphorical statement. These are stated as “lion”, “king”.

Common features of these metaphors are;
• That it is noticed by the students, life sciences is a main lesson and it’s expected by the students that life sciences is a leading lesson because of its subject’s diversity and the usefulness it provides to students life. Sample statements about this category is like this.

“Life sciences is like a lion for me because as lion is the king of the forest life sciences is the king of all the lessons, too.”
“Life sciences is like a king because as kings direct the land, life sciences direct us, too.”

These 11 sub-categories are reclassified under 4 different categories. These categories are defined as “knowledge source”, “life diversity”, “relating to life” and “relating towards life”.
According to the metaphors that children form about life sciences show the usefulness of this lesson as being main lesson in 1. degree and it’s aim and disciplines fully understood by students,
4. RESULT

This research has concluded this results according to datas and comments that are gathered by investigating the main question of the research to identify the metaphors that are about life sciences. Results;

- As seen in table 1; The metaphors that are formed in life sciences are matched programmes’s 4 element after categorising units.

<table>
<thead>
<tr>
<th>Sub-category elements</th>
<th>Category elements</th>
<th>Programm’s elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>Knowledge source</td>
<td>Target</td>
</tr>
<tr>
<td>Teacher</td>
<td>Knowledge source</td>
<td>Target</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Knowledge source</td>
<td>Target</td>
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<tr>
<td>Family</td>
<td>Conferring</td>
<td>Teaching learning process</td>
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<tr>
<td>Conferring power</td>
<td>Conferring</td>
<td>Teaching learning process</td>
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<tr>
<td>Behaviours</td>
<td>Relating with life</td>
<td>Measurement-evalution</td>
</tr>
<tr>
<td>Communations tools</td>
<td>Life diversity</td>
<td>Content</td>
</tr>
<tr>
<td>Plant</td>
<td>Life diversity</td>
<td>Content</td>
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<tr>
<td>Environment</td>
<td>Relating with life</td>
<td>Measurement-evalution</td>
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<tr>
<td>Realiting with “life” name</td>
<td>Relating with life</td>
<td>Measurement-evalution</td>
</tr>
<tr>
<td>Main lesson</td>
<td>Relating with life</td>
<td>Measurement-evalution</td>
</tr>
</tbody>
</table>
All the extracts about sub-category, category and program units are done with interpreting datas and explained with pattern metaphors in findings parts.

- From all of the disciplines (like concrete to abstract, nearer to further, simple to more complex use.) It has been noticed that the students have roofly understood them.
- With its age group features it has been understood that life sciences has got an important role for them to define the world.
- When the metaphor’s definitions are taken into account it has been seen that in every metaphor which are defined by the students, they reflect their social environment reality and their life.
- The student’s thoughts about the life science is much more clear and deeply understood from the metaphors which are given by them.

REFERENCES


