

## **Turkish Primary School Students' Attitudes toward 'Disgusting Animals': Insects**

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### **Abstract**

*The purpose of this research is to investigate the students' knowledge and attitudes toward spider and how influence gender and socioeconomic status to these attitudes. The data gathered from 139 5th grade students in Istanbul. There are 80 students from a public school and 59 students from a private school. In this study qualitative research method is used. A survey instrument that includes open ended questions was applied and semi-structured interviews are made. As a consequence of this research, it has been revealed that 5th grade students have fears toward insects because they have sense of disgust; they do not deeply know insects.*

**Key Words:** *attitudes toward spider, science education, primary education*

### **1. Introduction**

Based upon life history, global biodiversity and sheer numbers, insects are arguably the most evolutionarily and biologically successful group of animals on Earth. Insects perform many essential ecological services for humans that range from the pollination of flowering plants by bees, to the consumption of massive global detritus by cockroaches to a myriad of other phenomenon that make human existence possible (Wilson, 1987). Although livings like insects are beneficial for human and nature, people have bias against them.

A large majority of the general public indicated a dislike of ants, bugs, beetles, ticks, cockroaches, and crabs; an aversion to insects in the home; a fear of stinging insects, spiders, and scorpions; a desire to eliminate mosquitoes, cockroaches, fleas, moths, and spiders; and a view of the octopus and cockroach as highly unattractive animals (Kellert, 1993, p. 849). The first unattractive livings comes to people's mind are insects, because people generally encounter them in their daily lives

Children are also affected by these negative views towards insects because they do not have enough information about them. Knowledge of animals may influence children's beliefs and behavior toward them, thus building positive attitudes toward animals is one of main goals of environmental education programmes (Prokop & Tunnicliffe, 2008). Besides insects are included in programme for positive attitudes.

Children generally view insects as disgusting animal; the research is about why they think about insects like this. In order to be liked insects to students and children, they should know more information about insects. Also this can be done with educational programme.

**1.1. Problem condition**

The problem of the research is to understand what attitudes of the students toward insects are and what they know about the insects and what they do or feel for the insects?

In this research the below sub problems were tried to investigated.

- What do students feel toward insects?
- Is there a difference between girls and boys toward insects?
- Is there a difference between socioeconomically different students toward insects?
- Is there a difference between students who have pets or not toward insects?
- Is there a sufficient education program to know insects?
- Do students interact with insects in daily lives?

**1.2. Aim**

The purpose of research is to investigate the students’ attitudes toward insects, how attitudes affect the behavior of students toward insects and how they evaluate the importance of insect by evaluating factors that gender difference and the socioeconomic status of students.

**2. Method**

**2.1. Design of the research**

Qualitative research method was adopted for this study. The interviews were semi-structured.

**2.2. Sampling**

The population of this study is 139 students that are educated in 5th grade in Istanbul. Gender of students is indicated in Table 1. and socio-economic status of students is indicated in Table 2. Students who have pets or do not have are shown in Table 3.

Gender	Frequency ( <i>f</i> )	Percentage (%)
Female	63	45,3
Male	76	54,7
Total	139	100

**Table 1.** The gender characteristics of students who participants to survey

Socio-economic status	Number of Students	Total Percentage
Very low (0-750 TL )	22	%15,8
Low (751-1.000TL)	21	%15,2
Medium (1.001-1500 TL)	27	%19,4
High (1501 -..... TL)	69	%49,6
Total	139	100

**Table 2.** The socio-economic status of students who participants to survey

Codes	Number of students	Total Percentage (%)
Students who have pets	23	16,5
Students who do not have pets	116	83,5
Total	139	100

**Table 3.** Students who have pets or not

Semi-structured interviews were carried out with all the students participated in this research.

**2.3.Instrumentation and analysis**

The data was collected by interviews and a measuring instrument consisting of 6 open-ended and 4 close-ended questions. These questions are below:

1. Can you write a story about insects? (min 50 words )
2. What do you think when you see pictures of insects.
3. Which emotions do you come to your mind when said insects.
4. Can you write a memory about insects?
5. Can you explain the place of insects in people’s life; if so give examples about their importance?
6. Can you explain insects that are thought useful?
7. Which insect do you come to your mind?
8. Can you write insects you know?
9. Are insects vertebrate or invertebrate? Why?
10. Most of people do not like insects. Why people think like this. What do you think about it?

With open-ended questions students explain their ideas freely without being interrupted. Each student’s paper lasted for approximately 20 minutes.

The data are categorized according to students’ answers. For the open –ended questions students’ answers are arranged in tables in the result section. Tables show students’ emotions and generally what they think about insects. For each question different tables are created.

The data was collected in the first semester of 2014- 2015 school year.

### 3. Results

In the first question aim is to learn students’ dreams about insects. They write a story about insects. In the table 4 students’ emotions and ideas are categorized by gender. There are ugly, fears, friendship, helpful, etc. The highest percentage belongs to friendship which is a positive attitude and the same percentage is fear. This percentage is % 16, 67 for girls. Another percentage is love is %12, 28. For boy students another highest percentage is % 18, 79 friendship and love, then %18, 04 fears.

Codes	Girl		Boy		Total
	f	%	f	%	%
Disgusting	• 9	• 7,89	• 11	• 8,27	• 8,09
Love	• 14	• 12,28	• 25	• 18,79	• 15,78
Happiness	• 9	• 7,89	• 5	• 3,75	• 5,66
Killing	• 6	• 5,26	• 8	• 6,01	• 5,66
Hate	• 4	• 3,50	• 2	• 1,50	• 2,42
Beauty	• 3	• 2,63	• 0	• 0	• 1,21
Goodness	• 10	• 8,78	• 7	• 5,26	• 6,88
Harmful	• 5	• 4,38	• 6	• 4,51	• 4,45
Poisonous	• 4	• 3,50	• 10	• 7,51	• 5,66
Ugly	• 3	• 2,63	• 0	• 0	• 1,21
Useful	• 4	• 3,50	• 8	• 6,01	• 4,85
Fear	• 19	• 16,67	• 24	• 18,04	• 17,40
Friendship	• 19	• 16,67	• 25	• 18,79	• 17,81
Unanswered	• 3	• 2,63	• 0	• 0	• 1,21
Off topic	• 2	• 1,75	• 1	• 0,75	• 1,21
Illegible	• 0	• 0	• 1	• 0,75	• 0,40

**Table 4.** Student’s stories related insects

Written stories are generally lovely, but students generally feel fear toward insects. There is a citation from a student’s story.

*‘Black insect story*

*Once upon a time there is a very ugly insect. This insect does not like himself. Everyone who sees him always fears and breaks out. Someday insect goes at a home and hides when light starts. He searches for food at home but could not found. One of these days when he searches for food, he hears footfalls. The lights are open and a girl comes at room. She screams when sees insect. Then she hits insect with a slipper and insect died.’*

Codes	Girl		Boy		Total
	<i>f</i>	%	<i>f</i>	%	%
Disgusting	• 39	• 26,35	• 36	• 20,9	• 23,43
Poisonous	• 5	• 3,37	• 18	• 10,4	• 7,18
Harmful	• 8	• 5,40	• 11	• 6,39	• 5,93
Goodness	• 0	• 0	• 2	• 1,16	• 0,62
Hate	• 12	• 8,10	• 9	• 5,23	• 6,56
Love	• 13	• 8,78	• 8	• 4,65	• 6,56
Killing	• 4	• 2,70	• 9	• 5,23	• 4,06
Useful	• 4	• 2,70	• 3	• 1,74	• 2,18
Ugly	• 0	• 0	• 2	• 1,16	• 0,62
Physical appearance	• 2	• 1,35	• 8	• 4,65	• 3,12
Spiderman	• 0	• 0	• 1	• 0,58	• 0,31
Unanswered	• 6	• 4,05	• 4	• 2,32	• 3,12
Nausea	• 3	• 2,02	• 4	• 2,32	• 2,18
Compassion	• 3	• 2,02	• 3	• 1,74	• 1,87
Excited	• 0	• 0	• 2	• 1,16	• 0,62
Fear	• 49	• 33,1	• 52	• 30,23	• 31,56
		•		•	•
					•

**Table 5.** Ideas and feelings about insects

The second and third questions are about ideas and feelings of students toward insects. In the second question there are some insect pictures and students answer according to the pictures. In the third question students write the first thing when insect is said. According to the table 5 for question two and three there is % 33, 1 percentage of girl student answers about fear. The second percentage is %26, 35 is disgusting, and love is %8, 78. Also the highest percentage of boy students is fear % 30, 23. The second percentage is disgusting % 20, 9, and the other is poisonous % 10, 4.

The students’ ideas and feelings are fear, disgusting and love. Girl and boy students have the same feeling of fear.

Codes	Girl		Boy		Total
	<i>f</i>	%	<i>f</i>	%	%
Unanswered	• 20	• 30,30	• 19	• 24,67	• 27,27
Insect	• 28	• 42,42	• 26	• 33,76	• 37,76
Spider	• 3	• 4,54	• 5	• 6,49	• 5,59
Fly	• 2	• 3,03	• 3	• 3,89	• 3,49
Ladybugs	• 3	• 4,54	• 1	• 1,29	• 2,79
Ant	• 2	• 3,03	• 7	• 9,09	• 6,29
Tick	• 0	• 0	• 1	• 1,29	• 0,69
Bee	• 4	• 6,06	• 9	• 11,68	• 9,09
Cockroach	• 2	• 3,03	• 1	• 1,29	• 2,09
Worm	• 0	• 0	• 1	• 1,29	• 0,69
Millipede	• 1	• 1,51	• 1	• 1,29	• 1,39
Scorpion	• 0	• 0	• 2	• 2,59	• 1,39
Grasshopper	• 0	• 0	• 1	• 1,29	• 0,69
Tarantula	• 1	• 1,51	• 0	• 0	• 0,69

**Table 6.** Students’ memories about insects

According to table 6 students’ memories are related with insects. It shows that most of the students do not know insects name. Both girl and boy students do not know insects name.

Also the percentage of 30, 30 girl students do not answer the question, the percentage of % 24, 67 do not answer the question.

There is a citation from a student’s memory.

*Student A: ‘Some day when I was sleeping suddenly an insect fell on top of me and I was very scared.’*

Codes	Girl		Boy		Total
	<i>f</i>	%	<i>f</i>	%	%
Beneficial	• 27	• 42,1	• 23	• 30,67	• 66,67
Not beneficial	• 33	• 51,56	• 41	• 54,67	• 53,23
Unanswered	• 4	• 6,25	• 11	• 14,67	• 10,8

**Table 7.** Benefits of insect

In the question 7 students answer insects are beneficial or not. Both girl and boy students think that insects are not beneficial. This is % 53, 23 percentages. There is a citation from a student who thinks insects are beneficial.

*Student A: ‘Flies eat dead animals. Bees produce honey. Insects are food of birds and animals. Ants eat crumbs of bread and biscuits.’*

There is a citation from a student who thinks insects are not beneficial.

*Student B: 'I think they are not beneficial because they are not cute.'*

Codes	Girl		Boy		Total
	<i>f</i>	%	<i>f</i>	%	%
Cicada	• 1	• 1,29	• 0	• 0	• 0,62
Cockroach	• 2	• 2,59	• 2	• 2,43	• 2,51
Dung beetle	• 1	• 1,29	• 1	• 1,21	• 1,25
Spider	• 3	• 3,89	• 0	• 0	• 1,88
Fly	• 3	• 3,89	• 9	• 10,97	• 7,54
Microscopic creatures	• 0	• 0	• 1	• 1,21	• 0,62
Ant	• 6	• 7,79	• 3	• 3,65	• 5,67
Caterpillar	• 1	• 1,29	• 0	• 0	• 0,62
All insects	• 1	• 1,29	• 4	• 4,87	• 3,14
Slug	• 0	• 0	• 1	• 1,21	• 0,62
Firefly	• 2	• 2,59	• 0	• 0	• 1,25
Bee	• 13	• 16,89	• 16	• 19,5	• 18,23
Ladybugs	• 5	• 6,49	• 4	• 4,87	• 5,67
Butterfly	• 2	• 2,59	• 1	• 1,21	• 1,89
Leech	• 5	• 6,49	• 7	• 8,53	• 7,54
Unanswered	• 32	• 41,55	• 33	• 40,24	• 40,89

**Table 8.** Insects those are beneficial according to students

According to table 8 students do not answer names of beneficial insects because they do not think so. The percentage of % 41, 55 of girls and %40, 24 of boys write that insects are not beneficial. The other percentage is % 16, 89 of girls and % 19, 5 of boys for bees. This shows that most of the students do not know benefits of insects. However students who think insects are beneficial generally know bees. There is a citation from a student who thinks bees are beneficial.

*'Yes, bees because they make honey.'*

Codes	Girl		Boy		Total
	<i>f</i>	%	<i>f</i>	%	%
Caterpillar	• 7	• 3,34	• 8	• 3,67	• 3,50
Leech	• 3	• 1,42	• 4	• 1,83	• 1,63
Dragonfly	• 3	• 1,42	• 0	• 0	• 0,7
Grasshopper	• 6	• 2,84	• 6	• 2,75	• 2,80
Tick	• 5	• 2,38	• 11	• 5,04	• 3,73
Fly	• 12	• 5,71	• 17	• 7,79	• 6,78
Dung beetle	• 1	• 0,47	• 6	• 2,75	• 1,63
Butterfly	• 8	• 3,80	• 9	• 4,12	• 3,97
Common furniture beetle	• 1	• 0,47	• 2	• 0,91	• 0,7
Black insect	• 18	• 8,57	• 18	• 8,25	• 8,41
Ladybugs	• 18	• 8,57	• 10	• 4,58	• 6,54
Bee	• 14	• 6,67	• 14	• 6,42	• 6,54
Firefly	• 4	• 1,90	• 0	• 0	• 0,93
Cockroach	• 25	• 11,90	• 21	• 9,63	• 10,75
Spider	• 23	• 10,95	• 40	• 18,34	• 14,71
Cicada	• 7	• 3,34	• 3	• 1,37	• 2,34
Snails	• 3	• 1,42	• 5	• 2,29	• 1,87
Worm	• 7	• 3,34	• 9	• 4,12	• 3,74
Millipede	• 21	• 10	• 13	• 5,96	• 7,95
Centipede	• 2	• 0,95	• 0	• 0	• 0,46
Ant	• 22	• 10,47	• 17	• 7,79	• 9,11
Unanswered	• 3	• 1,42	• 4	• 1,83	• 1,63

**Table 9.** Insects’ name

In the table 9 there are insects name which are written by students for the question seven and eight. In the seventh question students write the first insect name that comes to their mind.

The highest percentage for girls is %11, 90 cockroaches, and %10, 95 spider, then %10, 47 ant. The highest percentage for boys is %18, 34 spiders, and % cockroaches, then % 8, 25 black insect. The boy students write spider because they generally watch Spiderman. And in the eighth question students write the other insects’ name they know. For the eighth question students also write the highest percentage is %14, 71 spiders, and %10, 75 cockroach, then %9, 11 ants. These shows students generally know spider, cockroach and ant.



Codes	Girl		Boy		Total
	f	%	f	%	
Vertebrates	22	34,37	19	25,34	29,49
Invertebrates	27	42,18	36	48	45,32
Unanswered	15	23,43	20	26,67	25,18

**Table 10.** Vertebrate or invertebrate

According to table 10 students’ % 42, 18 percentage of girl students and % 48 percentage of boy students think that insects are invertebrate. There are some citations from students.

*Student A: ‘Caterpillar is invertebrate because they are creeping.’*

*Student B: ‘I think they are vertebrate because if they are invertebrate, they cannot move.’*

Codes	Girl		Boy		Total
	f	%	f	%	
Ugly	• 1	• 1,19	• 3	• 3,20	• 2,25
Poisonous	• 6	• 7,14	• 8	• 8,51	• 7,86
Fear	• 14	• 16,67	• 19	• 20,21	• 18,54
Harmful	• 20	• 23,8	• 17	• 18,08	• 20,78
Offensive	• 0	• 0	• 2	• 2,12	• 1,12
Disgusting	• 12	• 14,28	• 12	• 12,76	• 13,48
Bias	• 1	• 1,19	• 0	• 0	• 0,56
First impression	• 1	• 1,19	• 0	• 0	• 0,56
Asshole	• 2	• 2,38	• 4	• 4,25	• 3,37
Appearance	• 9	• 10,71	• 8	• 8,51	• 9,55
Color	• 2	• 2,38	• 0	• 0	• 1,12
Unanswered	• 16	• 19,05	• 21	• 22,34	• 20,78

**Table 11.** Reasons for dislike of insects

The last question is why people do not like insects. According to table 11 the highest percentage of girls is % 23, 8 harmful. And the others are fear (% 16, 67) and disgusting (% 14, 28). The highest percentage of boys is fear (% 20, 21), then harmful (% 18, 08) and disgusting (% 12, 76). Totally % 20, 78 percentages of students do not answer the question.

As a consequence of semi-structured interviews, it has been revealed that primary school students have negative attitudes toward insects. Generally they have fears toward them. Also they think insects are not beneficial. Most of the students generally think bee is beneficial.

Moreover there is no difference between boy and girl students and socio economic status.

## 4. Discussion

By this research, it is shown that students do not know insects deeply. Students' feelings and emotions are due to the lack of curriculum. Most of them think insects are unnecessary. Their feelings are mostly fear, disgusting. However students write lovely stories and have funny memories.

Children should be allowed to interact with the organisms and ask questions. Additionally, teachers need to utilize the out-of-doors on the school campus, by taking children outside to look at plants and locate organisms such as birds and spiders. . (Patrick & Tunnicliffe, 2011). Children always escape from insects; they have bias from their parents. Therefore they have no relationship with insects; they think that insects are awesome.

Eagly and Chaiken (1993) define human attitude as a "psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor". Human attitudes can, in turn, affect beliefs associated with that object (Kruglanski & Stroebe, 2005; Marsh & Wallace, 2005). The mechanisms by which beliefs influence attitudes and attitudes influence beliefs is based on the way attitudes and beliefs are cognitively organized (Osgood & Tannenbaum, 1955; Rosenberg, 1960; Albarracín, Johnson, & Zanna, 2005), perceptually organized (Heider, 1958; Albarracín et al., 2005) and the outcomes of judgmental processes (Sherif, Sherif, & Nebergall, 1965; Albarracín et al., 2005). By the way students are generally effected by human attitudes around their relationship. Also there is not a sufficient in their daily lives, school and curriculum.

Prokop, Prokop and Tunnicliffe (2008) suggest that "biology/science teachers should encourage children to keep a diverse range of animals, particularly invertebrates that can be obtained and reared easily" (Prokop, Prokop, & Tunnicliffe, 2008, p. 446) and "that science activities with animals should be more focused on rearing invertebrates and improving children's attitudes and knowledge about them" (Prokop, Prokop, & Tunnicliffe, 2008, p. 431).

## 5. Suggestions

Students think insects are not beneficial. There should be more information about their importance. Due to their fears about insects they do not like them and think they are unnecessary. There should make addition into curriculum.

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