



## INTERESTS OF 5<sup>TH</sup> THROUGH 10<sup>TH</sup> GRADE STUDENTS TOWARD HUMAN BIOLOGY

### İLK VE ORTAÖĞRETİM ÖĞRENCİLERİNİN İNSAN BİYOLOJİSİ KONULARINA YÖNELİK İLGİLERİ

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**ABSTRACT:** This study investigated the middle and high school students' interests towards the subjects of human biology, specifically, "Human Health and Nutrition" and "Human Body and Organs." The study also investigated sources of their interests and factors that impact their interests, namely people that they interact and courses that they take about biology and science. 972 students from fifth through tenth grades in 17 schools in Ankara participated in this study. The results show that students' interests towards human biology in general do not change from fifth to tenth grade. However, students' interests towards various subjects of biology were decreased. Ninth grade students reported the lowest interest among the grades investigated towards the subject of "Human Health and Nutrition" and "Human Body and Organs." Factors such as students' interest in sports, their health concerns, and their desire to protect themselves from diseases might have effected the formation of their interests towards these subjects.

**Keywords:** interest, differences between male and female students, interest toward biology subjects, and the stimulating factors

**ÖZET:** Bu çalışmada, ilköğretim ve ortaöğretim okulu öğrencilerinin insan biyolojisine (insan vücudu ve organları, insanın sağlığı ve beslenmesine ne derece ilgi duydukları ve bu ilgilerinin nereden kaynaklandığı, ilgilerinin oluşmasında, kimlerin, hangi derslerin ve özellikle biyoloji veya fen dersinin ne kadar etkili olduğu araştırılmıştır. Bu çalışma, 2004 yılında Ankara'daki 17 okulda, 5. sınıftan 10. sınıfa kadar olan 972 öğrenci üzerinde yürütülmüştür. Bu öğrencilerin karşılaşılmaları göstermiştir ki, 5. sınıftan 10. sınıfa doğru insan biyolojisinde karşı ilgileri değişmemiştir, diğer çeşitli biyoloji konularına karşı ilgileri ise azalmıştır. "İnsan sağlığı ve beslenmesi" ile "insan vücudu ve organları" konularına olan ilgi 9. sınıfta en düşük seviyeye ulaşmıştır. Öğrencilerin spora karşı ilgileri, kendi sağlıkları ile ilgili endişeleri ve kendilerini hastalıklardan koruma isteği onların insan biyolojisine olan ilgilerini etkileyen faktörlerdir.

**Anahtar sözcükler:** ilgi, kız-erkek öğrenci farkları, biyoloji konularına olan ilgiler ve uyarıcı faktörler

#### 1. INTRODUCTION

One of the most frequent terms that we use in our daily lives is "interest." Different meanings are associated with this term in different areas. "Interest" is defined as the tendency, importance, closeness, or enjoyment associated with an event, object or way of thinking and the desire to engage with them in one way or another. It is also possible to see many different definitions in the literature. In every discipline, a definition of "interest" specific to that discipline has been developed. Interest is being thought of in two ways by scholars: "to feel interested" and "to be interested." While the former one is considered as a state, "to be interested" is considered as the general and special acts of interest. General interest is a positive affinity towards certain objects, events and ways of thinking. A person having a special interest should be actively busy with certain things and spending time and money for them. Hobbies, courses that people like to take, owning a pet, growing a plant could be given as examples to specific interests (Todt, 1990; Krapp, 1998; 1999; Krapp, Hidi & Renninger 1992). For a person to be interested in a certain thing, it should be important for him/her and it should arouse happiness for him/her.

In the "Pedagogical Interest Theory" developed by Prenzel, Krapp and Schiefele (1986, 1989) interest is explained as the relationship between a person and the object of his/her interest. By suggesting the "Individual-Interested Object Theory" Krapp, Hidi and Renninger, (1992) consider interest as the lived experiences between a person and the object he/she is interested in. This situation

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motivates the person to learn in depth about the object he/she is interested in. Interests are also very important for individual's planning of his/her future and his/her personal development.

The purpose of this study is not to consider interest in all its aspects but rather focus on the importance of interest in education, specifically in biology education.

The research about interest in biological subjects dates back to ancient times. Although there are a lot of studies conducted on this subject in America and in Europe, there are a few in Turkey. Lewis (1947), Lantagne (1950, 1952) and Schaller (1960) investigated interest in health problems in the USA. These studies showed the high level of interest of young people toward health problems. Lantagne (1952) emphasized that geographic differences are not distinctive factors in health interest. Kelly (1985) investigated, what is called, the long – lived interest in science. Smail and Kelly (1984) searched about the interest in physics, nature and human physiology and concluded that,

- Female students have greater interest in these subjects than the male students
- Female students have greater interest in human physiology
- IQ has weak relationship with interest.

In a study about interest in biology, Gardner and Tamir (1989) suggested that subjects and themes and activities depending on these subjects and themes and also student motivation must be taken into account to increase student success. They conducted this three-dimensioned research in Israel and the questionnaire they used included these three components.

In Germany, there are a lot of research about interest in biology and science. One of these studies is conducted by Ruppolt (1967) who investigated why primary and secondary school students have interest toward information about animals more than information about the plants and came up with these conclusions:

- the fact that the attitudes and behaviors of animals can be easily observed
- the relationship of the children with domesticated animals
- the opinion that animals are more useful for human beings
- the fact that animals can be differentiated from plants more easily
- the fact that some students don't perceive plants as a full part of nature ...etc.

Another study done by Finke (1988) investigated the interest of students from 5<sup>th</sup> grade to 11<sup>th</sup> grade in human physiology, biology and environment. He came up with the following conclusions:

- the interest of the female students is higher than that of the male students
- the interests become lower as children grow
- the reasons for the decline in the level of interest includes reaching adolescence and new environment in different schools
- the female students interest toward social service, which means that in future, they may choose social career as a job...etc.

## **2. PURPOSE OF THE STUDY**

Among other factors, it is very important to consider student interest when planning biology classes. If students are interested in any course, this stimulates a strong desire for learning (motivation). Hence attracting students' interest should be a goal of effective education (Heckhausen, 1968). In order to deliver an effective biology education program, how students' interests are formed and changed over time should be explored.

In this study changes in the interest of students aged between 12 and 17 towards certain subjects of human biology were studied. Other purposes of this study were to find out if there were any changes in student interest across grade levels and the reasons for this change. This information would help to find out which courses and subjects attract most interest, and to develop suggestions about how interest in biology subjects could be increased.

### 3. METHOD

This study was conducted in 2004 with 972 students from 5<sup>th</sup> to 10<sup>th</sup> grades in 17 schools in Ankara, the capital city of Turkey. Ankara is a city that continuously receives migrants from different regions of Turkey and its population is about 4 million. The schools were chosen based on the socioeconomic status of the regions that they were located. Initially 25 schools were targeted for this study; however, because of various administrative problems and certain issues with some schools, 17 schools were included in this study. This situation does not pose a disadvantage for this study, since the chosen 17 schools were representative of the general population in Ankara. In order to make sure that the schools were representative of the general population of Ankara, different socioeconomic regions were selected as school locations. Similar to the general situation in Turkey, not all of the schools in Ankara have high standards of education in terms of facility quality and opportunity to reach resources. To collect data, a questionnaire was given to 1180 students; however, those with inappropriate and incomplete responses were eliminated during data analysis. Prior to administering the questionnaire the principal investigator of this study made explanatory comments about the questionnaire and encouraged students not to answer questions without reading the items (especially for the 5<sup>th</sup> and 6<sup>th</sup> grade students).

**Table 1: The distribution of students based on grade levels and their percentages**

Classes	Female Students (n)	Male Students (n)	Total	Percentages
5	70	73	143	14,7
6	64	77	141	14,5
7	84	80	164	16,9
8	91	83	174	17,9
9	93	88	181	18,6
10	81	88	169	17,4
<b>Total</b>	483	489	972	100

#### 3.1. Data Collection Instruments

A questionnaire was used as the data collection instrument which was originally developed in Germany by Finke (1999). The questionnaire was developed in Turkey using the similar methods as Finke by the author of this study. To make sure that the contents of the questionnaire were same as the original; two people, who were fluent in both Turkish and German, translated the questionnaire from German to Turkish and from Turkish to German. A pilot study was conducted to examine the appropriateness of the questionnaire items for the Turkish subjects. The questionnaire was a five point Likert-scale. These scales were composed of phrases like, "I don't want to learn at all," "I don't want to learn," "I am neutral," "I would like to learn," and "I would like to learn very much" (see the questionnaire in appendix). Values ranging from 1 to 5 were given to the phrases.

The questionnaire consisted of the following four part:

1. Background information
2. The interest shown toward human body and organs
3. The interest shown toward human health and nutrition
4. Stimulating factors that effect interest toward human biology

### 3.2. Reliability

The questionnaire included two sections, which were “human body and organs” and “human health and nutrition” and included 28 items. The questionnaire was named as “Human Biology Questionnaire.” Cronbach  $\alpha$  (alpha) value of the questionnaire was determined as  $\alpha=94$ , which indicated a high level of reliability.

## 4. FINDINGS

### 4.1. Variation of Interest toward human biology subjects with grade and level gender

The interests of students about biology subjects were measured in two sections in the questionnaire which were “Human Body and Organs” and “Human Health and Nutrition.” The questions in these two sections were asked under the title “Interests Toward Human Biology.” In figure 1, fifth to tenth grade students’ interests toward human biology are shown. Fifth to tenth grade students’ interests toward human biology did not show much variation, a similar result obtained in other such as Arbinger et al, (1976), Kelly, (1985), and Finke, (1999).

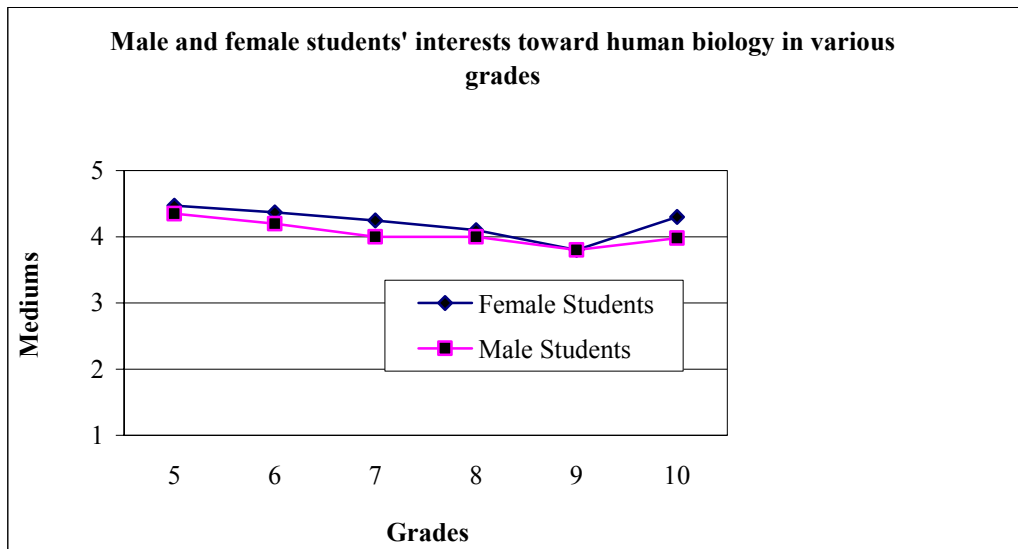


Figure 1: Variation of Interests Towards Human Biology Based on Age and Grade Level

Table 2: Variance analysis (ANOVA) of interests toward human biology based on grade level

	Female Students	Male Students
Degrees of Freedom	462	508
F- Value	16,284	10,288
P (Significance Level)	,000	,000

From fifth grade to tenth grade a general decrease in students’ interest toward various subjects of biology was observed except a slight increase from ninth grade to tenth grade. Interest of female students toward these subjects in the tenth grade was more than those in the ninth grade. This result is similar with the results from the male students in Finke’s (1998) study. In general students’ interest decrease from fifth grade to tenth grade, but a trend of increase in the final grades was observed. The reasons for decrease in interest with the increase in age may lie with the facts that students enter a new environment after the fifth grade (a change from primary school to middle school) and they start experiencing the characteristics of pre puberty and puberty periods.

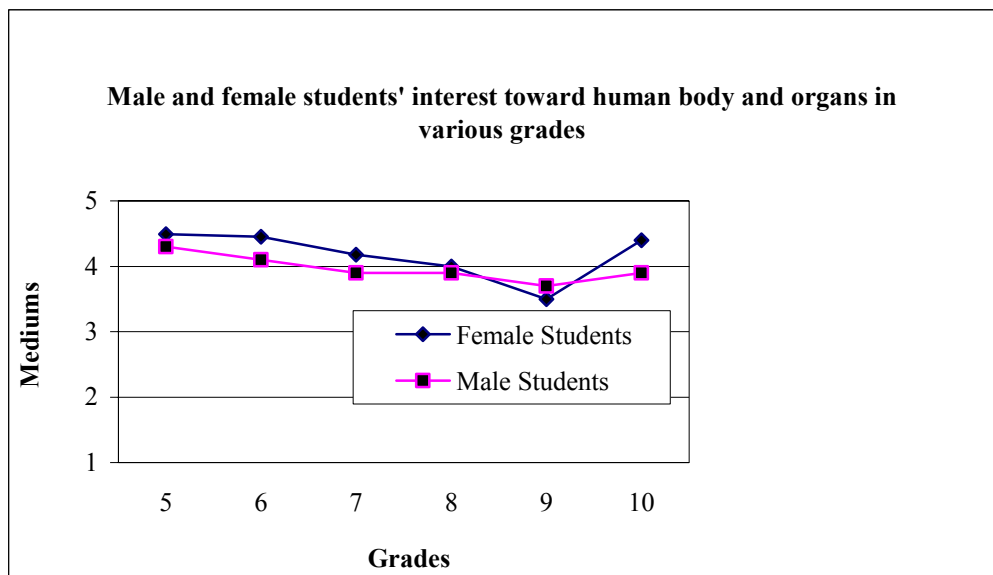
Puberty is a transition period for social maturation and every aspect of character development. Teenagers have the desire of freedom by separating from their parents, but at the same time they are afraid of the responsibilities of adults. There are many important duties that face them and many important decisions. As they move from being dependent on parents towards being independent, youngsters should develop a stationary concept of self. This process is defined as self identity development (Erikson, 1968). As youngsters grow up, they discover that some behaviors and beliefs that they inherit from their families, friends and ethnic groups are no longer suitable for them.

For many pupils, friends at the same age group make it possible for them to enter a new life with different values and roles and be independent as friends provide a social and emotional support net. Young pupils feel a high degree of desire toward a friend group who approve their choices, perspectives, and behaviors. A strict compliance to friend and group values results which is a situation that reaches its peak at the ninth grade (Perry, 1990).

Females who are at sixth and seventh grades have more interest in forming relations with peers than males. This is a result of the female students' earlier entrance to puberty period than males (Gottfredson, 1981; Todt, 1990). In addition, their higher interests toward these issues probably influence most female students' future job choices, since the female students have more desire to help people compared to male students (see Table 3).

#### 4.2. Interests toward Human Health and Nutrition and Human Body and Organs

In figure 1 students' general interest toward human biology was shown, however, in figures 2 and 3 students' specific interests toward "Human Health and Nutrition" and "Human Body and Organs" are shown separately. As it can be seen in figures 2 and 3 student interests toward these two subjects were lowest in the ninth grade. The reason for this observation may be the High School Entrance Examination (HSEE) and the excitement of change that comes with proceeding to a new place, i.e. high school. In Turkey, students prepare for the HSEE starting from the early years of primary school and after the examination is over, students free themselves from the examination stress and they start a new beginning in a new school and this is a time when their interests toward all classes is diminished.



**Figure 2: Variation of Interests Toward Human Body and Organs**

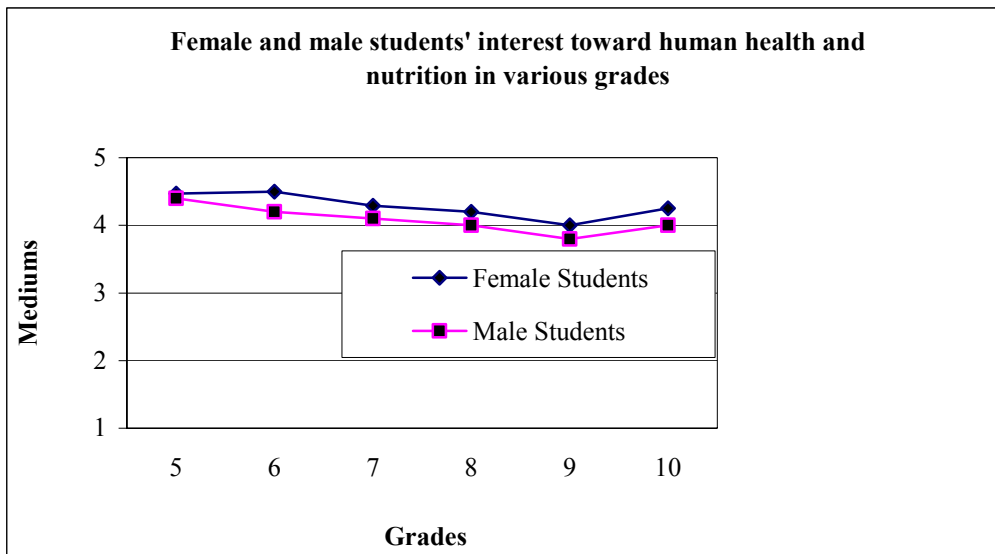
**Table 3: Variance Analysis (ANOVA) of Student Interests Toward Human Body and Organs**

	Female Students	Male Students
Degrees of Freedom	462	508
F- Value	24,685	10,813
P (Significance Level)	,000	,000

Interestingly the only time period that interest toward human body and organs was higher for male students was the ninth grade. Their entrance to puberty period, when their interest toward the subject is at the highest level, may explain this result. From sixth grade to tenth grade, female students' interest toward male students significantly increases. This difference among sexes may be caused by different self identities of sexes. Female students' different self-perception than those of male students' causes this. Female students perceive that by being interested in these subjects, they would be more accepted in their social environments. This way, female students' interest toward these subjects increases more compared to males.

With puberty, as students' interest toward their body increases, their interest toward this subject also increases (Todt, 1990). In other words, the fact that female students enter puberty earlier than male students increases their interest toward the subject earlier (Schenk-Danzinger, 1988; Oerter & Dreher 1995; Knußmann, 1996).

Physical and psychological changes and increased interest of sexes toward each other during the pre-puberty and puberty periods, increases the interest of students toward human body and organs and also human health and nutrition. Female students enter womanhood during 13-13.5 years of age. In this period, female students start to think about sexual fantasies and this becomes the main subject in their peer conversations. Compared to male students' female students talk about these issues more often with their peers in the German culture (Schenk-Danzinger, 1988). This could be seen as one of the reason for their decreased interest toward biology courses.

**Figure 3: Variation of Interests Toward Human Health and Nutrition**

**Table 4: Variance Analysis (ANOVA) of Interests Toward Human Health and Nutrition**

	Female Students	Male Students
Degrees of Freedom (Df)	462	508
F- Value	7,659	7,945
P (Significance Level)	,000	,000

In general, beginning from the second period of primary education (from sixth to eighth grades), the reason for decrease in interest becomes evident. The reasons for female students' increased interest toward human health and nutrition in seventh and eighth grades is explained above.

#### 4.3. Effects of stimulating factors

Table 5 shows the importance of stimulating factors that affect student's interest toward human biology.

**Table 5: Effectiveness of Stimulating Factors That Influence Formation of Interest Toward Human Biology**

Male and Female students N=972	What or who stimulated the interest you have today toward human biology and how much?	Female Students (n = 483)	Male Students (n = 489)
Sorted based on mediums		Sorted based on mediums	Sorted based on mediums
3,82	The fact that I exercise	3,83	3,81
3,60	Worries that I have about my own health	3,77	3,44
3,55	My desire to be useful to others	3,70	3,41
3,55	Both the fear of catching a disease and the desire to be protected from diseases	3,66	3,45
3,54	The news that reports the adverse affects of environmental pollution on health	3,60	3,47
3,42	The news that reports the diseases caused by unclean food	3,58	3,28
3,40	The books, newspapers, and magazines that I read	3,57	3,23
3,33	The job that I want to choose in the future	3,50	3,18
3,45	Movies on TV	3,43	3,47
3,22	The discussions that I occasionally have with my family members	3,38	3,07
3,24	Biology classes	3,34	3,14
3,14	The discussions that I have with friends	3,31	2,99
3,31	Biology or science teachers	3,29	3,32
3,05	The diets I am on the importance I attribute to nutrition	3,22	2,90
3,10	The talks that I had with doctors	3,19	3,01
3,26	The curiosity that is caused by the changes that happens on my body during puberty	3,17	3,35
3,04	A homework that I prepared or a meeting that I have attended or participated	3,09	2,99
3,11	The fact that I want to have a child in the future	3,04	3,17
2,91	Someone I know who is a disabled person	2,94	2,88
2,87	The connection that I have health organizations (such as red crescent)	2,87	2,87
2,88	The dissatisfaction that I feel about my appearance	2,87	2,90
2,94	An illness or an accident that I experienced in the past	2,84	3,03
2,97	Radio programs	2,75	2,74

##### 4.3.1. Stimulating factors that affect the formation of interest toward human biology

Male and female students considered sports activities as the most important factor that influences their interest toward human biology. The second most important factor was the desire to help people while the third most important factor was, for both male and female students, the concern they feel about their own health. Another issue that influenced their interest was the news about the

negative affects of environmental pollution on human health. Concerns about their own health, fear of diseases, and desire to protect themselves from diseases increased the interest toward human health. According to Martens and Rost (1998) “perceiving environmental problems as risk and danger motivates positive attitudes toward environment.”

Other stimulating factors that follow were films on TV and the possibility of diseases that were caused by unclean food. The factors that were least influential were the biology teachers and biology classes. Under normal conditions, these factors were expected to be among the most important.

The effects related to films on TV, the curiosity caused by the puberty related changes on human body, and the desire to have kids in the future were stronger with female students compared to male students. In all other factors male and female students made similar comments, but female students considered these three factors differently. Female students had much more desire to help other people compared to male students. This situation became apparent with female students’ job selection. Female students often chose jobs that require helping other humans (nurses, doctors, teachers, etc.).

## **5. RESULTS AND DISCUSSION**

### **5.1. Interests toward human biology**

In this section of the study, the development of interests toward the subject of human biology was discussed and some recommendations for biology classes were made.

In order to be successful in biology education, first of all, teachers should spend more time in their field and they need to have access to more resources for their students to receive better education.

The average of the interests toward “human body and organs” and “human nutrition and health” was high for all grades. This means that both male and female students have high interest toward the investigated subjects. Interests toward human body and organs show a decline from sixth to ninth grades, but tend to increase again in 10<sup>th</sup> grade.

As a matter of fact Todt’s study (1995) found that there was a decrease in the 11 to 15 year old children’s satisfaction toward their family, school and life which was caused by pre-puberty conditions.

Löwe (1987) argues that moving from primary education to secondary education may have a negative effect on interests beside puberty. According to Löwe, the fact that students start to take field area classes, they meet with new teachers, and they face with different teaching methods requires time for adjusting to these changes. Besides, especially in high schools, which are different schools than primary schools, there are older students around and there are new classmates and all these factors necessitate new high school students to perform better (Gößwein, 1982; Weißbach, 1986). However, a new social environment and the time it takes to adjust to the new school delay students’ motivation toward classes and therefore decrease their interests (Eder, 1992).

Entering to puberty period is a phase of finding sexual identity and finding new areas of interest (Shenk-Danzinger, 1988; Oerter & Dreher, 1995). Adjusting to the new identity also causes certain interests to disappear (Gottfredson, 1981; Todt, 1990).

The important thing in biology education is to keep the interest of students high during lessons. If students make relationship with real objects, that is, if they can work with real objects and these kinds of works are supported, then the student start to be interested in the subject, become motivated and become curious about the theme.

If the success in biology education is wanted, above all, teachers should allocate time for their field and they must have more resource for the students to be well- educated.



## 5.2. Factors that play a role in the formation of interests toward human biology

The factors that play a role in the formation of interests toward human biology were students' interest in sports, the worries they feel toward their own health, their desire to help others, the fear of catching a disease, and the desire to protect themselves from diseases. The news that report the effects of environmental pollution on health, the news that report the diseases spread through unclean food, the books, newspapers and magazines they read, and the job that they want to choose in the future were also important factors.

Here, the roles of internal and external factors' are equally important. Some internal stimulating factors should be supported, such as the desire to help others. On the other hand internal factors such as fear should be handled more carefully in classes. Otherwise self-defense mechanisms may be activated in kids and they may feel helpless (Unterbruner, 1991; Sörensen, 1994). Fear of diseases and environmental degradation may cause students to fear the future (Unterbruner, 1991; Kasek, 1993). To increase interest, supporting these subjects is neither meaningful nor necessary but in overcoming these fears kids and youngsters should not be left alone (Petri, 1993). If the teachers include the fear students feel toward diseases in their classes and help them understand how they could protect themselves from diseases, students' interests toward the class may increase. According to Todt and Handel-Mattes (1990) for 80% of the students the subjects that they were interested in most were the ones that had a use in daily life.

There are also external factors that play a role in interests toward human biology. For example the written media is an important factor for the interests toward human biology. According to Walser and Schmidt-Müller's study (1986) libraries and book stores are effective in the formation of 10<sup>th</sup> grade students' interests. Meusling (1993) and Eschenhagen et al (1996) think that the presence of various biology books in classrooms is very helpful when students work in groups or when they prepare their homework and they advise the presence of books in classrooms.

Giehl (1987; 385) says that "Families and teachers should advertise to encourage students to read." Biology classes cover important issues about the society, science, and students themselves and are one of the important stimulating factors. For 25% of students, biology classes have a very big influence on forming interests toward human biology. It is shown in many studies biology courses stimulate interest toward desired jobs. (Birk et al, 1978; Bergmann, 1992, 1994).

It is known that older students are affected from written media while younger students are affected by television programs. It is not right to suggest watching TV programs to students who watch TV for 10-15 hours a week (Krisch et al, 1980; Krause & Pohl, 1985; Giehl, 1987; van Eimeren & Klinger, 1995). However, quality programs that have informational value and that do not encourage violence could be suggested. Films that are related to the class content could also be suggested (Killermann, 1996).

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## GENİŞLETİLMİŞ ÖZET

**Problem Durumu:** Günlük hayatımızda en sık karşılaştığımız kavramlardan biri olan “İlgi”, çeşitli alanlarda farklı anlamlarda kullanılmaktadır. İlgi, belli bir olaya, nesneye veya düşünceye olan eğilim, duyulan merak, verilen önem, duyulan yakınlık, hoşlanma ve onlarla meşgul olmaktır. Her disiplinde, o disipline özgü ilgi tanımı geliştirilmiştir. İlgi, ilgi duyma ve ilgilenmek diye bilim adamları tarafından ele alınmakta ve ilgi duyma, durum olarak değerlendirilmektedir. İlgilenmeyi ise genel ve özel olarak ilgilenmek diye ortaya koymaktadırlar. Genel anlamdaki ilgilenme belli nesnelere, olaylara ve düşüncelere olan pozitif yönelimlerdir. Özel ilgilenme ise belli bir şeyle birebir meşgul olma, onun için zaman ve para ayırmadır. Örneğin hobiler, en çok sevilen dersler, hayvan besleme, bitkilerle ilgilenme gibi meşguliyetler sayılabilir. İlgi duyulan şeyle ilgilenmek, kişi için çok önemli olup onda mutluluk uyandırır. Bu durum kişinin ilgi duyduğu obje hakkındaki bilgileri derinlemesine öğrenmesine neden olur. İlginin, kişinin gelişmesinde ve kişinin geleceğini plânlamasında büyük bir önemi vardır.

**Çalışmanın Amacı:** Bu çalışmada, “öğrencilerin ilgilerinde sınıflara göre değişmeler olup olmadığı, varsa bunların nedenleri”, “biyolojinin çeşitli konularına olan ilgilerinin tespiti, hangi sınıfta hangi konulara ilgi gösteriliyor ve biyolojiye olan ilginin nasıl artırılması gerektiği gibi konularda hipotez geliştirmek” amaçlanmıştır.

*Yöntem:* Bu çalışma, 2004 yılının güz ve bahar döneminde Ankara'daki 17 okulda, 5. sınıftan 10. sınıfa kadar olan 972 öğrenci üzerinde yapılmıştır. Okullar seçilirken okulların bulunduğu bölgelerin sosyo-ekonomik düzeyleri göz önünde tutulmaya çalışılmıştır. Söz konusu 17 okul Ankara'da bulunan devlet okullarıdır. Bu okullar, okul idarecileri ile görüşülerek geneli temsil etmesi açısından yüksek, orta ve düşük gelire sahip bireylerin yaşadığı semtlerden eşit sayıda seçilmiştir. Çünkü Türkiye'nin genelinde olduğu gibi Ankara'da da okullar eşit olanaklara sahip değildir.

Bu çalışmada, Finke tarafından Alman öğrenciler için geliştirilen ve eş zamanlı olarak bu çalışmada Türk öğrenciler için geliştirilen standart bir anket kullanılmıştır. Türkçeye uyarlanan bu anketin güvenilirliği .97'dir. Anket, 5'li likert tipinde bir ölçektir. Bu ölçekler; "Hiç Öğrenmek İstemem", "Öğrenmek İstemem", "Olsa Da Olur Olmasa Da", "Öğrenmek İsterim" ve "Çok Öğrenmek İsterim" ifadelerinden oluşmuştur. Bunlara 1'den 5'e kadar değer verilmiştir.

Çalışmada SPSS programı kullanılmış ve faktör analizi yapılarak, genel dağılıma bakılmış, bağımsız faktörlerin bağımlı faktörlere etkisi araştırılmıştır. Varyans Analizi (ANOVA) yapılarak kız ve erkek öğrenciler arasındaki farkların anlamlılık düzeylerine bakılmıştır.

*Bulgular:* 5. sınıftan 10. sınıfa kadar öğrencilerin biyolojinin çeşitli konularına olan ilgilerinde bir azalma görülmektedir. Kız öğrencilerin 10. sınıfta biyoloji konularına olan ilgileri 9. sınıftaki kız öğrencilerden daha fazladır. 9. sınıf öğrencilerindeki bu ilgi azlığı diğer sınıflara göre en düşük olanıdır. Bu sonuç Finike'nin erkek öğrencilerin sonucuna tam benzerlik göstermektedir. Genelde 5. sınıftan 10. sınıfa kadar olan ilgiler azalmakta; fakat son sınıflarda yükselme eğilimi göstermektedir.

6. ve 7. sınıfta olan kızların biyoloji konularına olan ilgileri erkek öğrencilerin ilgilerinden daha fazladır. Bu da kız öğrencilerin ergenlik dönemi nedeniyle bu konulara olan ilgilerinden kaynaklanmaktadır.

9. sınıfta öğrencilerin insan vücudu ve organlarına olan ilgileri en düşük seviyededir. İnsan vücuduna ve organlarına karşı olan ilginin ilginç bir şekilde ilk ve tek olarak 8. sınıfta erkek öğrencilerde yüksek olması bu yaşlarda erkek öğrencilerin ergenlik çağına girmesiyle açıklanabilir. İnsan sağlığı ve beslenmesi konusunda 6. sınıftan 10. sınıfa kadar olan dönemde kız öğrencilerde erkek öğrencilere göre ilgi belirgin bir şekilde yüksektir.

Kız ve erkek öğrenciler, "spor aktivitelerini" insan biyolojisine olan ilgilerinde en etkin faktör olarak değerlendirmektedirler. 2. sırayı da hem kız hem de erkek öğrencilerin kendi sağlıkları için endişelenmeleri oluşturmakta ve 3. sırada ise, insanlara yardım edebilme arzusu gelmektedir.

*Sonuçlar ve Yorum:* "İnsan vücuduna ve organlarına" ve "İnsanın beslenmesi ve sağlığına" olan ilgilerin ortalamaları bütün sınıflar için yüksektir. Bunun anlamı, hem kız hem de erkek öğrencilerin araştırılan konulara karşı oldukça ilgili olduklarıdır. İnsan vücudu ve organlarına olan ilgilerde 6. sınıftan 9. sınıfa doğru düşüş görülmekte 10. sınıfta ise tekrar yükselme eğilimi görülmektedir.

Derslere karşı olan ilgi azalmasında ergenliğin yanında ilköğretimden orta öğretime geçmenin de olumsuz bir etki yapabileceği söylenebilir. Ortaöğretimde alan dersleri başlamış ve öğrenciler yeni öğretmenlerle tanışmışlardır. İlköğretimden farklı eğitim öğretim yöntemleri kullanılmaya başlanmıştır. Tüm bunlara öğrencilerin alışması zaman alacaktır. Bunların yanında özellikle farklı okullar olan liselerde, yaşça daha büyük öğrencilerin bulunduğu bir alan ve yeni sınıf arkadaşları bulunmaktadır. Bütün bu faktörler, onların daha fazla performans göstermelerini gerektirecektir Yeni bir sosyal çevre, yeni okula uyum öğrencilerin derslere motive olmalarını geciktirmekte ve dolayısıyla ilgilerinin de azalmasına neden olmaktadır.

Bu bulgular, ders planı hazırlanırken insan biyolojisinin, öğrencilerin ilgi alanları içerisinde olduğunun göz önünde tutulmasının gerekliliğini ortaya koymaktadır.

İnsan biyolojisine yönelik ilgilerin oluşmasında rolü olan uyarıcı faktörler sırasıyla; öğrencilerin spor yapmayı sevmeleri, kendi sağlıkları için taşıdıkları endişeler, diğer insanlara yardım etme istekleri, hem hasta olmaktan korkma hem de hastalıklardan korunma arzuları, çevre kirlenmesi sonucu sağlıklarında oluşacak zararları bildiren haberler, temiz olmayan besinlerden oluşacak

hastalıklar hakkında dinlemiş oldukları haberler, okumuş oldukları kitaplar, gazeteler ve dergiler ile ileride seçmek istedikleri meslekler olarak görülmektedir.

Burada iç ve dış uyarıcı faktörler aynı derecede rol oynamaktadır. Bir kısım iç uyarıcı faktörler desteklenmelidir. Örneğin, diğer insanlara yardım edebilme arzusu. Diğer yandan iç bir uyarıcı faktör olan korkular derslerde dikkatli bir şekilde ele alınmalıdır. Yoksa çocuklarda savunma mekanizmasını harekete geçirerek onlarda çaresizlik duygusuna sebep olabilir. Hastalıklardan ve çevrenin bozulmasından korkma, öğrencilerde gelecekte korkmaya neden olmaktadır.

İnsan biyolojisine olan ilgide rolü olan dış uyarıcı faktörler de vardır. Örneğin yazılı medya, insan biyolojisine olan ilgide önemli bir faktördür. Araştırmalara göre lise 10. sınıf öğrencilerin ilgilerinin oluşmasında kütüphaneler ve kitapçılar etkili olmaktadır.

İleriki yaşlardaki öğrencilerin yazılı medyadan, küçük yaşlardaki öğrencilerin ise televizyon yayınlarından etkilendikleri ortaya çıkmaktadır. Haftada 10–15 saat televizyon seyreden öğrencilere televizyon yayınlarını izlemelerini tavsiye etmek doğru değildir. Kaliteli, bilgi değeri olan, şiddeti ve saldırıyı teşvik etmeyen yayınların izlenmesi, dersle ilgili filmlerin izlettirilmesi tavsiyesi tavsiye edilebilir.