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Basic Scientific Process Skills and TV Cartoons in Early Childhood

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Abstract

The aim of the research is to identify the three most common TV cartoons in October 2016 according to the results of the rayting ratios and to examine the inclusion of Basic Scientific Process Skills in these cartoons. In October 2016, the three most frequently watched cartoons were identified as "Rafadan Tayfa", "İstanbul Muhafızları" and "Keloğlan Masalları". All cartoons are broadcast in the national channel TRT Children. As a result of the findings, found that the cartoon which includes most frequently the Basic Scientific Process Skills is the "Istanbul Muhafızları" which is the second rank in the rating order. It is determined that the cartoon which has least frequently basic scientific process skills is "Keloğlan Masalları" which is in the third place according to Total Rating. While the "Rafadan Tayfa" and the "Istanbul Muhafızları" cartoons draw a positive graphic in terms of including basic scientific process skills, it has been found that "Keloğlan Masalları" does not contribute to the development of positive attitudes toward to science in early ages.

1. Introduction

As the interaction with the child's surroundings increases with growth and maturation, the child is more likely to react to events and events. Investigating the causes of curious events and asking questions are multiplier characteristics of 2-6 age group children. This desire for children to exploit is fundamental to developing scientific awareness and is an important force for learning throughout school [1].
In the literature, summarized why children should be compared with science in six reasons:

1. Children naturally enjoy observing and thinking about nature.
2. Exposing students to science develops positive attitudes towards science.
3. Early exposure to scientific phenomena leads to better understanding of the scientific concepts studied later in a formal way.
4. The use of scientifically informed language at an early age influences the eventual development of scientific concepts.
5. Children can understand scientific concepts and reason scientifically.
6. Science is an efficient means for developing scientific thinking [7].

Early childhood where the child is full of curiosity and interest in the world and does not yet have negative attitudes towards the science, provides a perfect ground for the acquisition of scientific process skills. So what does the scientific process skills contain?
The American Association for the Advancement of Science (AAAS) commission and researchers have often referred to scientific process skills as Basic Science Process Skills and Integrated Science Process Skills. Basic scientific process skills include observing, classifying, communicating, measuring, prediction and inferring. Integrated scientific process skills include identifying and controlling variables, interpreting data, experimenting and formulating models [4]. Basic concepts of science and the scientific process skills begin as early as infancy and this ability develops with age [12].
Tehelen (1976) and Wellman (1978) point out that scientific process skills enhance readiness to school, and Campbell (1972) and Almy (1966) stated that scientific process skills support the mathematical success [11]. Acquisition of scientific process skills in pre-school period will contribute to the child's social-emotional development and contribute to the children becoming future researchers, creators and peaceful individuals, who know themselves in all aspects, communicate effectively with others [2].

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According to Social Learning Theory, one of the sources of effective social learning is the many and various symbolic models presented in television, movies and other illustrated screenings. When considering on the large amount of time people spend watching television models, it appears that mass media can play an effective role in shaping behavior and social attitudes [3].
Cartoons are close to their children's cognitive and emotional characteristics and behaviors, and children can easily identify with their cartoon heroes. Cartoons are often preferred by children and are important entertainment tools that connect children to the screen. In a study, children reported that they watched the most cartoons on television [5]. In another research was found that children are affected and imitated by violent content in cartoons and forced their parents to take off their costumes or accessories from the characters they identify with [10].
Research conducted by Fisch, Yotive, Brown, Garner & Chen (1997) on early childhood research on science and cartoons draws attention. It was assumed in the study that children distinguish between educational and non-educational programs, that they find the educational programs less attractive and therefore will not follow them. As a result of the research, found that children did not distinguish cartoons and both programs were attractive to children [8].
To sum up, cartoons are one of the media's children's role models for social learning. Early childhood is a period in which the child is filled with curiosity and interest in the world, yet does not feed negative attitudes towards to the science, and provides the appropriate ground for the acquisition of scientific process skills. The discovery of situation of Basic Scientific Process Skills in cartoons that are often preferred in the study will serve as an informative guide for educators and families.

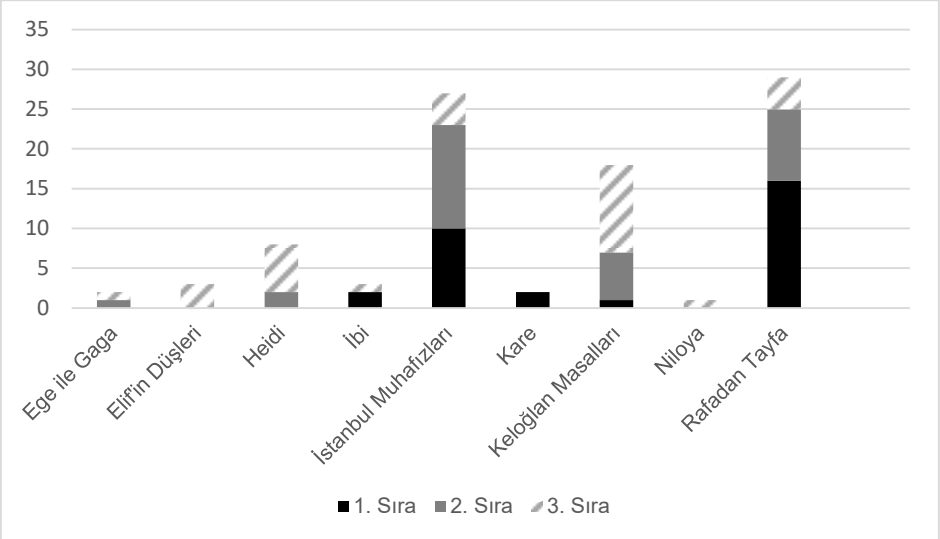
2. Method

The aim of the research is to determine watched top three cartoons during October of 2016 according to the results of the rating and to examine the inclusion of Basic Scientific Process Skills in these cartoons. The research was realized by the content analysis method included in qualitative research methods.
During the research, three cartoon films with the highest total rating were handled during October 2016. 40 episodes from 3 cartoons, 120 episodes included in the sampling group. 26 episodes of “İstanbul Muhafızları” have been watched because of accessbility. In total 106 episodes reached and watched by researchers. The analysis of the basic scientific process skills in each episodes has been carried out by checklist created from the studies in the literature, based on the opinions of the experts and the pilot watch TV cartoons [4] [9].

3. Findings

This section contains findings from the study. Detection of cartoons to be investigated in the study was made according to the results of the total rating in October 2016.

Table 1: Cartoon in the top 3 according to TV total rating ranking October 2016



In October 2016, it was determined that the top 3 cartoons watched the most were “Rafadan Tayfa”, “İstanbul Muhafızları” and “Keloğlan Masalları”.

Table 2: The frequency and percentage values of the basic scientific process skills in the cartoons

Basic Scientific Process Skill	The name of the TV cartoon					
	“Rafadan Tayfa” (40 Episodes)		“İstanbul Muhafızları” (26 Episodes)		“Keloğlan Masalları” (40 Episodes)	
	f	%	f	%	f	%
Observation	711	44	555	46,9	439	50,8
Classification	84	5,2	76	6,4	74	8,6
Communication	310	19,2	215	18,1	146	16,8
Measurement	228	14,2	150	12,7	74	8,6
Prediction	180	11,1	134	11,3	75	8,7
Inferring	102	6,3	55	4,6	56	6,5
Total	1615	100	1185	100	864	100

Findings of the research were presented in Table 2. Only 26 episodes were watched by researchers from "Istanbul Muhafızları" because of accessibility. When Table 2 is examined, considering this situation, it is seen that the TV cartoon that contains the most frequent of the basic scientific process skills is “İstanbul Muhafızları”. “İstanbul Muhafızları” is broadcasted with the cooperation TRT Children Channel and Istanbul Metropolitan Municipality Culture Inc. It is thought that the cartoon has more educational and scientific content because it is broadcasted with support Istanbul Municipality Culture Inc. It is seen that the basic scientific process skills, which are most frequently seen in the "Istanbul Muhafızları" in order of, are observation (46,9%), communication (18,1%), measurement (12,7%) and prediction (11,3%). It has been found that the basic scientific process skills that have been determined at the least are classification (6,4%) and inferring (4,6%).

When the findings of the "Rafadan Tayfa" TV cartoon are examined, it is seen that the basic scientific process skills, which are most frequently seen in order of, are observation (44%), communication (19,2%), measurement (14,2%) and prediction (11,31%); the basic scientific process skills that have been determined at the least are inferring (6,3%) and classification (5,2%).

When the findings of the "Keloğlan Masalları" TV cartoon are examined, it is seen that the basic scientific process skills, which are most frequently seen in order of, are observation (50,8%) and communication (16,8%). It has been found that the basic scientific process skill that has been determined at the least is inferring (6,5%).

4. Conclusions & Recommendations

As a result of the research, it is determined that, the TV cartoon which contains the most frequent of the Basic Scientific Process Skills is the “İstanbul Muhafızları” which is in the second rank in rating order; and the TV cartoon which contains the least frequent of the basic scientific process skills is Keloğlan Masalı which is in the third place. This finding of the study is similar to the results of the research conducted by Fisch, Yotive, Brown, Garner & Chen (1997). Children do not distinguish between cartoons as educational or non-educational, and both types of programs can be attractive to them.

Observation was found to be the most frequently used basic scientific process skill, while the least skills were found to be conclusions and classifications in the study. While the cartoons "Rafadan Tayfa" and "İstanbul Muhafızları" draw a positive graphic in terms of have basic scientific process skills, it has been found that "Keloğlan Masalları" do not contribute to the development of positive attitudes towards children at early ages.

Researches stated that use of animated cartoons increases the young students’ knowledge and understanding of specific science concepts, which are normally difficult to comprehend and often cause misconceptions to them [6].

When research findings are evaluated, it can be seen that TV channels can broadcast cartoons which more includes scientific process skills and timeline can be arranged in a more conscious manner by considering especially in hours that children watch TV most frequently.

It is seen that basic scientific process skills can be presented to children in a more amusing and implicit manner, as in the case of the "Rafadan Tayfa", rather than the clear and didactic presentation in TV cartoons.

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