

APPLICATION OF MULTIFACTOR EVALUATION PROCESS METHOD TO DETERMINE TELEVISION PROGRAMS BEST KIDS


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ABSTRACT

Television is an electronic medium that is very familiar to children, because many films show interesting programs for children. Children's media, especially television, is one of the important media for children in the process of absorbing (internalizing) certain social values in society. In television media can present programs about portraits of daily life and behavior both in the form of real stories and dramatisasi in accordance with the desired purpose. Children's genre television programs still exist that contain some elements of violence and negative behavior. This should get more attention from parents so that their children avoid deviant behavior. The selection of good television programs for children to see is very important to prevent children from behavior that is not appropriate for their age. Children who watch excessive television can damage a child's development. However, there are also event programs that are suitable for children and even have the potential to be used as a medium for socializing character education values for children. This can be understood because the power of television can increase the enthusiasm of care, knowledge and even the desire of the audience through every scene, impression, image, sound, and message presented. Based on various television programs that are not all suitable for children, it is necessary to have parental guidance in watching television programs. This study will analyze the best television shows that can be watched by children aged 13 years and under. The Multifactor Evaluation Process method makes it easy to determine children's television programs that are best and worth watching even without being accompanied by parents and families. Web-based applications are built using PHP programming language and MySQL databases. This research will use 4 criteria, namely educational elements, language elements, moral elements, and violence elements. In addition to the criteria, this study also used 10 alternatives consisting of various kinds of children's television shows from various television stations. By applying the Application of the Multifactor Evaluation Process Method to determine the best children's television programs produce television viewing that is useful for children aged 13 years and under.

Keyword : Decision Support System, MFEP, HR Police

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1. INTRODUCTION

Children who watch excessive television can damage a child's development. However, there are also event programs that are suitable for children and even have the potential to be used as a medium for socializing character education values for children aged 6-8 years. This can be understood because the power of television can increase the enthusiasm of care, knowledge and even the desire of the audience through every scene, impression, image, sound, and message presented. Based on various television programs that are not all suitable for children, it is necessary to have parental guidance in watching television programs. Children need to get guidance in watching television because the programs presented are not all suitable for children's age. At least television shows offered have two positive and negative benefits. The positive benefits of television shows can be obtained if children get guidance from parents in watching television shows. The positive benefits of television shows if explored further can be used as a

medium, model, and model of character education for children. Basically, television shows have positive benefits without denying the negative benefits of television shows. The positive benefits of television shows include: such as education, creativity, and knowledge of using and operating computers. Watching television shows with high-quality educational content during preschool can improve basic academic skills [2]. There are negative excesses such as the amount of time spent watching television, the violent influence of television shows, and aggressive behavior towards education. In addition, in the long run children whose time is more used to watch television can trigger mental disorders, such as depression and anxiety. Based on this, it can be concluded that television has both positive and negative impacts [3]. In addition to television, children today also use a lot of smartphones or smartphones. Smartphone or gadget is an electronic device used for communication and knowing information. Gadgets are one of the IT that is experiencing rapid development. Smartphone users can easily participate, share and create a work in the form of short films, videos or content posted on various social media such as YouTube, Instagram, Twitter, Facebook, and so on [4]. Content or short videos made by content creators are not a few that contain elements of violence, immorality, and other negative elements. If not closely monitored, the content or short videos may be seen by minors and may make the child's behavior more negative. Researchers also found unpleasant events or phenomena on the behavior of children around the researcher's home. These children often say rude and rude to their friends. Parents are also worried about the bad behavior of these children. One of the factors that influence this behavior is the quality of the shows offered by television. Among these shows, many contain elements of violence even though the show is a children's genre. In the process of selecting the best children's television programs, they can use the Multifactor Evaluation Process (MFEP) method. The Multifactor Evaluation Process (MFEP) method is one of the Decision Support System (DSS) methods by weighing various criteria that affect alternatives [5]. The Multifactor Evaluation Process (MFEP) method requires several criteria that will later be given appropriate weighting and then the alternatives of each case are evaluated based on these consideration factors. So that the best solution is obtained from each test case [6]. Based on the above problems, researchers conducted a study entitled "Application of the Multifactor Evaluation Process (MFEP) Method to Determine the Best Children's Television Program". It is hoped that the results of this study can be a source of information for parents in choosing a spectacle for their children.

2. RESEARCH METHOD

Research Materials and Tools

In this study, several materials and tools are needed. The materials and tools are as follows:

1. Stationery (such as ballpoints, pencils, erasers and so on), is used to record all the needs in completing research.
2. Laptops, used to compile research reports and create applications.
3. Internet, used to find research support materials such as scientific papers and create survey forms with google forms to collect data needed in research.

Research Procedure

Research procedures are steps that must be carried out in research to reach a conclusion. The research flow that the author uses can be seen in the following figure:

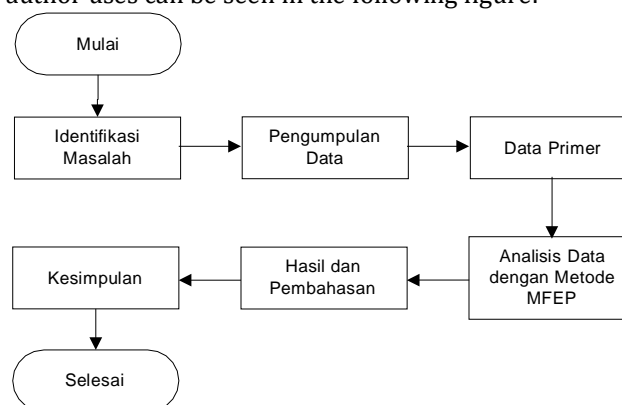


Fig 1. Research Procedure

Data Collection Methods

The data collection method used in this study is the *survey method*. The survey was conducted by creating a *google form* and distributed online. The data collected has several criteria and alternatives as follows.

1. Criterion

The criteria in this study are as follows:

1. Education
2. Language
3. Moral
4. Violence

5. Alternative

Alternatives to this study are several television shows that are children's genre. The alternatives in this study are as follows:

1. Upin Ipin (MNCTV)
2. Spongebob Squarepants (GTV)
3. Si Bolang (Trans 7)
4. Si Unyil (Trans 7)
5. Kiko (RCTI)
6. In Ancient Times (MNCTV)
7. Shaun the Sheep (MNCTV)
8. The Trains (TVRI)
9. Let's Draw (TVRI)
10. Learning from Home (TVRI)

Software Development Methods

The software development method used in this study is the *waterfall* method. The *waterfall* method of this study can be seen in the following picture.

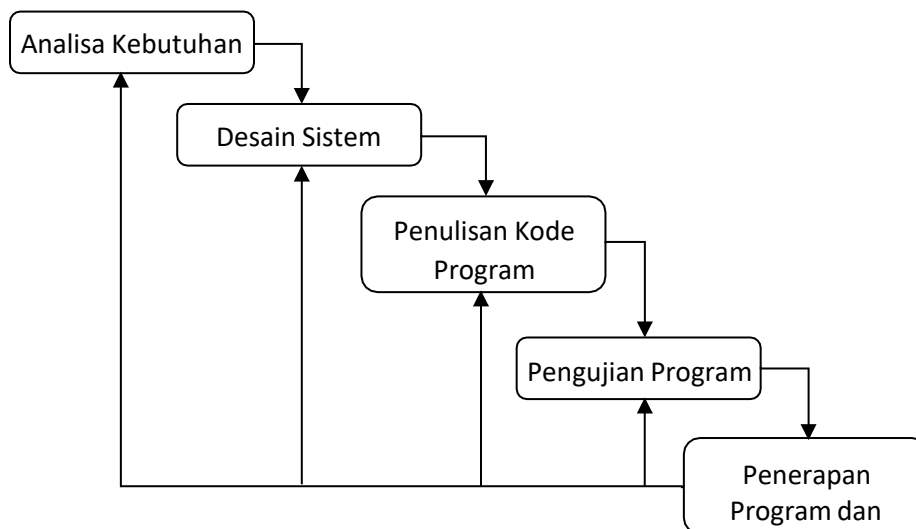


Fig 2. Waterfall Diagram

After obtaining data from 50 respondents, then the data will be converted into data that can be analyzed. The data transformation carried out can be seen in the following table.

Table 3.1. Data Transformation

No	Alternative	Best Education	Best Languages	Best Moral	Non-Violent
1	Upin Ipin (MNCTV)	29	18	26	22

2	Spongebob Squarepants (GTV)	10	9	8	12
3	Si Bolang (Trans 7)	20	19	20	17
4	Si Unyil (Trans 7)	20	20	17	15
5	Kiko (RCTI)	3	4	1	7
6	In Ancient Times (MNCTV)	12	13	23	15
7	Shaun the Sheep (MNCTV)	2	3	0	5
8	The Trains (TVRI)	8	6	4	10
9	Let's Draw (TVRI)	11	8	10	23
10	Learning from Home (TVRI)	18	18	13	20

System Planning

System design uses UML modeling language consisting of *Usecase Diagram, Class Diagram, Activity Diagram, and Sequence Diagram.*

1. *Usecase Diagram*

Broadly speaking, the system process to be designed is illustrated with the *Use case Diagram* contained in Figure 3.4 below:

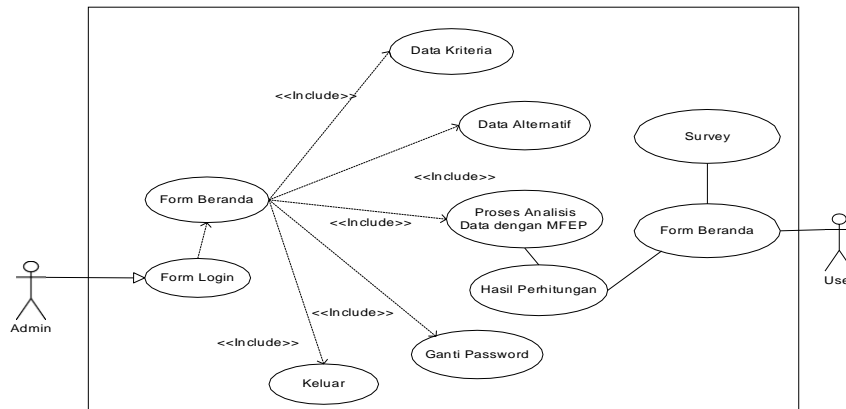


Fig 3. Usecase Diagram

Class Diagram

A *class diagram* is a specification that, when instantiated, produces an object and is at the core of object-oriented development and design. Figure 3.5 is a *Class Diagram* of the decision support system for determining the best children's television program:

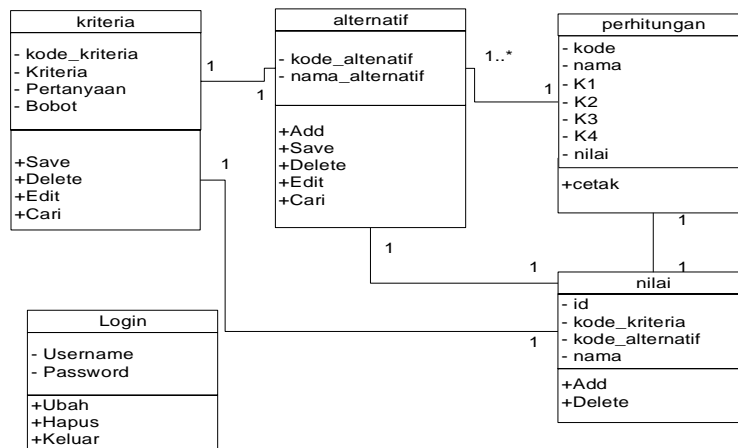


Fig 4. Class Diagram

3. RESULTS AND DISCUSSION

Survey Data Analysis Using MFEP Method

Analysis using the *MFEP* method for the selection of the best television shows for children aged 13 years and under was carried out in several stages as follows:

1. Determine the factor and the weight of the factor.

Determine the factor and weight factor where the total weight must be equal to 1 ($\sum \text{weight} = 1$), i.e. *factor weight*. Factors and weights can be seen in Table IV.1 below.

Table 1. Factors and Factor Weights

No	Factor	Weight
1	Education	0.3
2	Language	0.2
3	Moral	0.3
4	Violence	0.2
Total ($\sum W_j$)		1

2. Fill in the values for each factor. Fill in the values for each influencing factor in decision making from the data to be processed in Table 2.

Tabel 2. Value for Each Factor

Alternatif	Nilai							
	Pendidikan		Bahasa		Moral		Kekerasan	
	Bobot Faktor	Evaluasi Faktor	Bobot Faktor	Evaluasi Faktor	Bobot Faktor	Evaluasi Faktor	Bobot Faktor	Evaluasi Faktor
A1	0.3	29	0.2	18	0.3	26	0.2	22
A2	0.3	10	0.2	9	0.3	8	0.2	12
A3	0.3	20	0.2	19	0.3	20	0.2	17
A4	0.3	20	0.2	20	0.3	17	0.2	15
A5	0.3	3	0.2	4	0.3	1	0.2	7
A6	0.3	12	0.2	13	0.3	23	0.2	15
A7	0.3	2	0.2	3	0.3	0	0.2	5
A8	0.3	8	0.2	6	0.3	4	0.2	10
A9	0.3	11	0.2	8	0.3	10	0.2	23
A10	0.3	18	0.2	18	0.3	13	0.2	20

Weight evaluation calculation process

The weight evaluation calculation process is the process of calculating the weight between the weight factor multiplied by the evaluation factor, and the sum of all weight evaluation results to obtain the total evaluation results.

Tabel 3. Evaluation for alternative A1

Faktor	Bobot Faktor		Evaluasi Faktor	Bobot Evaluasi
Pendidikan	0.3	x	29	8.7
Bahasa	0.2	x	18	3.6
Moral	0.3	x	26	7.8
Kekerasan	0.2	x	22	4.4
Total				24.5

Do the calculation process above for all alternatives then it will be obtained as follows.

Tabel 4. MFEP Method Calculation Results

Kode	Nama Acara Televisi	Hasil Perhitungan
A1	Upin Ipin (MNCTV)	24.5
A2	Spongebob Squarepants (GTV)	9.6
A3	Si Bolang (Trans 7)	19.2
A4	Si Unyil (Trans 7)	18.1
A5	Kiko (RCTI)	3.4
A6	Pada Zaman Dahulu (MNCTV)	16.1
A7	Shaun the Sheep (MNCTV)	2.2
A8	The Trains (TVRI)	6.8
A9	Mari Menggambar (TVRI)	12.5
A10	Belajar dari Rumah (TVRI)	16.9

Based on the table above, it can be seen that the alternative that has the highest value is A1 with a value of 24.5. Therefore, A1 alternative Upin dan Ipin (MNCTV) was chosen as the best television show for children aged 13 years and under.

Application with MFEP method

The results of the application with the MFEP method are as follows.

1. User Home Page

The user's home page is used as an initial display that contains menus that can be used by the user. The user's home page display is as follows.

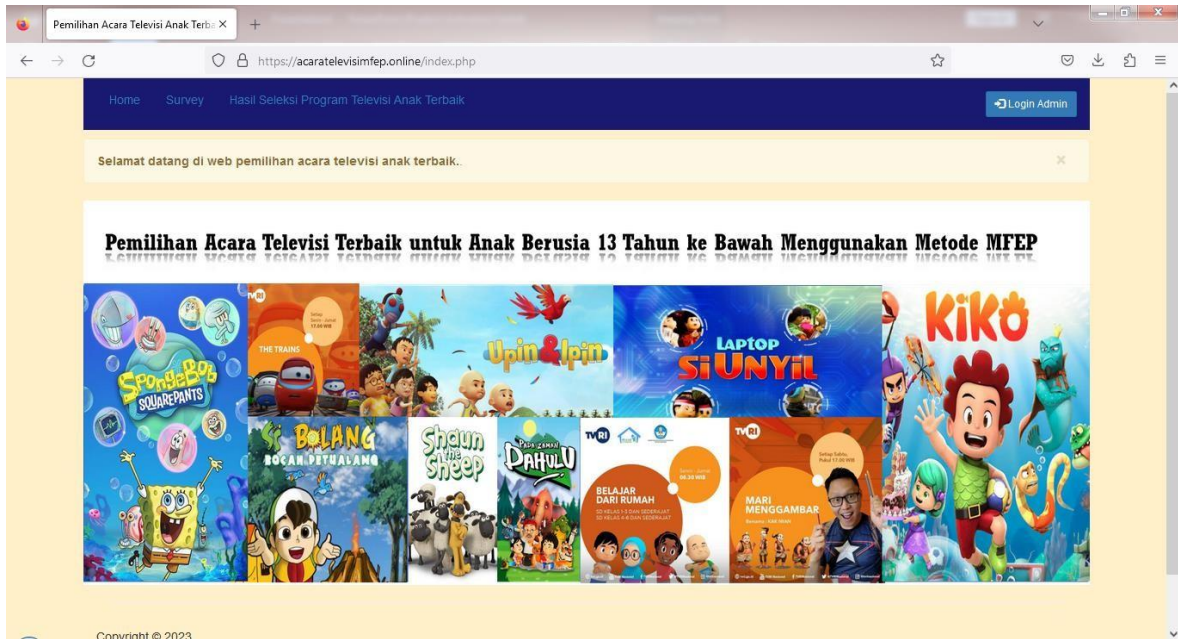


Fig 5. User Home

2. User Calculation Results Page

This page is used by *users* to see the results of calculations with the *MFEP* method for the best children's television programs. The appearance of this page is as follows.

Kode Alternatif	Nama Alternatif	Kriteria			
		Pendidikan	Bahasa	Moral	Kekerasan
A1	Upin Ipin (MNCTV)	2	1	3	1
A2	Spongebob Squarepants (GTV)	3	0	0	0
A3	Si Bolang (Trans 7)	1	1	0	0
A4	Si Unyil (Trans 7)	0	1	1	1
A5	Kiko (RCTI)	1	1	0	0
A6	Pada Zaman Dahulu (MNCTV)	0	0	2	1
A7	Shaun the Sheep (MNCTV)	0	0	0	0
A8	The Trains (TVRI)	0	2	0	0
A9	Mari Menggambar (TVRI)	0	2	1	2
A10	Belajar dari Rumah (TVRI)	0	1	0	2

Bobot Kriteria

Pendidikan	0.3
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Fig 6. User Calculation Results Page

3. User Survey Page

The survey page can be used by users to enter survey data that matches existing criteria. The display of survey page results is as follows.

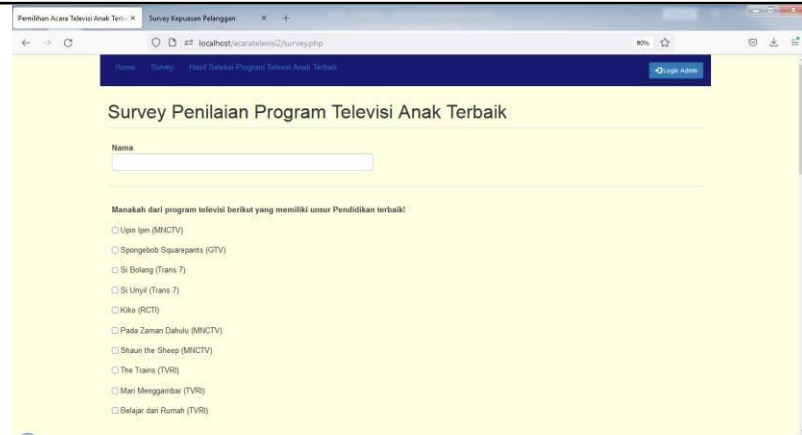


Fig 7. User Survey Page

4. Calculation Page

The calculation page is used to process data with the *MFEP* method. The display of the calculation page results is as follows.

Kode Alternatif	Nama Alternatif	Kriteria			
		Pendidikan	Bahasa	Moral	Kekerasan
A1	Upin Ipin (MNCTV)	2	1	3	1
A2	Spongebob Squarepants (GTV)	3	0	0	0
A3	Si Bolang (Trans 7)	1	1	0	0
A4	Si Ujuy (Trans 7)	0	1	1	1
A5	Kiko (RCTI)	1	1	0	0
A6	Pada Zaman Dahulu (MNCTV)	0	0	2	1
A7	Shaun the Sheep (MNCTV)	0	0	0	0
A8	The Trains (TVRI)	0	2	0	0
A9	Mari Menggambar (TVRI)	0	2	1	2
A10	Belajar dari Rumah (TVRI)	0	1	0	2

Bobot Kriteria	
Pendidikan	0.3

Fig 8. Calculation Page

In accordance with the analysis and design as explained in the previous chapter, namely the research method, this section will present the results of the system that was built using the design that was carried out in the previous chapter. In this chapter the discussion will be carried out on the results built and the functional system. Analysis of *survey data using the MFEP method* can produce a decision that can be the basis for users to choose the best children's television shows. This research also produced an application that can be used to select the best children's television programs using the *MFEP method*. The results provided by the application are the best results based on survey data analysis using the *MFEP method*. Based on the results of the analysis using the *MFEP method*, the television show Upin Ipin (MNCTV) was obtained as the best television show with a value of 24.5 as the highest score among other television programs.

4. CONCLUSION

The conclusions of this study are:

1. The best television show for children aged 13 years and under can be determined by providing several assessment criteria such as educational elements, language elements, moral elements and violence elements.
2. The *Multifactor Evaluation Process* method is applied by giving a weighted value to the assessment criteria and carrying out the calculation process according to the formula owned by the method to

each existing alternative.

3. The application used to select the best children's television programs is designed using PHP programming language and uses *MySQL* as its database.
4. The research conducted resulted in the decision that the television program *Upin dan Ipin* (MNCTV) was chosen as the best television program with a score of 24.5.

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