



## **DEVELOPMENT OF GAMIFICATION-BASED DIGITAL FLIPBOOK MEDIA ON IPAS MATERIAL (STUDY ON GRADE IV ELEMENTARY SCHOOL)**

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### **ABSTRACT**

The purpose of this research and development is to produce media products that are valid, complete, practical, and attractive. This research was tested at SD Negeri Balarjosari 1 guided by the ADDIE model to develop digital flipbook media. The data collection techniques used to develop *batumema* multimedia are tests, observation, documentation, interviews, and questionnaires. The results of this study are in the form of digital flipbook media by utilizing technological developments based on gamification, the media developed can be said to be valid, complete, practical, and interesting, this is evident from the results of data analysis, namely (1) the results of media validation with a total score of 49 with a percentage calculation obtaining 87.5% including the criteria "Very Valid". The results of the material validation obtained a total score of 39 with a percentage calculation obtained 88.63% including the criteria for "Very Valid" material. (2) the results of the calculation that at the first meeting got a percentage of 81.25% while at the second meeting got a percentage of 87.50%. These results have increased in the results of working on student evaluation questions. (3) The calculation results can be known the level of practicality based on the assessment given by the teacher obtained a score of 30 with a percentage of 93%, percentage is included in the "Very Practical" category (4) The attractiveness of digital flipbook media is obtained from filling out a user response questionnaire. Referring to the data that has been obtained, regarding the results of user responses given by student assessments, the total percentage obtained is 86.75%, and the total percentage obtained is in the "Very Good / Very Interesting category. Digital flipbook media on the theme of Indonesia Rich in Culture needs to be developed even better. as for suggestions that need to be considered, the media display should be made more attractive.

### **Keywords:**

Development  
Digital Gamification  
Flipbook Media,  
IPAS, Culture

### **INTRODUCTION**

In the world of education, its development always follows the existing times. The rapid development of the times today requires educators to be able to create creative and interesting learning so that optimal learning can be created. The primary school level is used as the first step to instill concepts, thus it is at this level that can equip students at a higher level (Waskito, 2017). Education can be interpreted as something that is used as a benchmark to advance the life of the nation in various aspects. Thus in education, special attention is needed to create human resources that have good quality so that the knowledge presented to students will be more meaningful (Asmiyati, Suhartono, & Suripto, 2017:1). Guided by Permendiknas No 32 of 2013, outlines "The learning process in educational units is organized in an interactive, inspiring, fun, motivating and encouraging way for learners to actively participate, be creative, and independent".





Based on the above Permendiknas, quality learning can be seen from the interaction that occurs during learning activities to realize the desired goals. (Hendra, 2015:49). Based on the Permendiknas, it is necessary to pay special attention to the learning process so that it follows the expected learning objectives, namely quality learning.

The realization of quality learning certainly cannot be separated from the role of the teacher, namely the teacher as a facilitator. During learning, educators or teachers use the media to present material to students. The way of presenting material by less varied teachers can harm students, such as one of which is that students feel bored and lack interest in learning, which of course can affect students' understanding of the material. To make it easier for students to understand the concept of true and abstract material, a tool is needed, namely in the form of learning media that follows what students need or according to their characteristics (Hilman & Dewi, 2021). The role of the teacher is to pay special attention to the use of the media according to the needs of students. This is because the use of models, methods, and media influences motivation so that it is related to learning outcomes.

According to the opinion outlined by Prayekti (2015), motivation can be defined as a positive impulse that generally comes from within an individual and can change his mindset and behavior more than before. Motivation is an impulse that arises in an individual who is carried out in a certain way to achieve their desires. (Andriani, 2019). Based on the opinion described by Emda (2017:175) Environmental factors are one of the factors that can influence and foster an individual's learning motivation so that learning is more meaningful.

To create meaningful learning, one of them is by linking learning with the student's environment, this is often called contextual learning. (Hosnan, 2016) that contextual learning is a learning activity that combines previously owned compliance with the environment around students used as a learning resource, the application of contextual learning is certainly inseparable from the role of the teacher as a facilitator. Agree with what was stated by Oemar (2008:7) that in learning activities that combine material with the environment, students can be utilized as a learning resource in both the skills and knowledge aspects, so that the environment also influences student learning outcomes if utilised properly. In addition, following Law No.20 of 2003 which discusses the national education system article 1 outlines " Learning is the process of interaction between learners and education and learning resources in a learning environment.

The learning media used should need special attention, such as being adapted to the learning style, needs, and characteristics of students, this is because the learning styles of students are not the same. Following the opinion presented by Luh & Ekayani (2021:3) that the use of media in learning following what is needed by students can affect student motivation, experience, and learning outcomes. In addition, the use of media to support learning activities can attract students to want to study harder. In this current era, the use of learning media through technological developments.

According to Datnow (2020), The 21st century is characterized by rapid technological development in all aspects. The development in the 21st century is certainly not the same as the 20th century, this is because this century demands quality



and also results in an individual (Wijaya, et.al, 2016:1). In this century, especially in the field of education, the use of technology in learning is very important (Sole & Anggraeni, 2018:1). The use of technology in education can certainly have a positive impact, which can help students to keep up with the times so that learning is more interactive. (Wijaya et al., 2016) argue that the utilization of technology in learning can provide a meaningful experience for educators and teachers.

Based on the results of observations conducted by researchers at SDN Balearjosari 1, especially in class IV, in learning activities the methods used by teachers are lectures, assignments, and questions and answers. At the time the researchers made observations, the material presented by the teacher was discussing cultural diversity in the surrounding environment, some students were enthusiastic about mentioning the diversity that existed in their area but some students did not know about the cultural diversity that existed around them, so that some students still found it difficult to understand the material. In addition, other difficulties during learning material discuss various kinds of forces. The facilities at SDN Balearjosari 1 are quite complete such as a computer laboratory, library, and other supporting media, but the existing facilities have not been able to be utilized by teachers to the fullest. During learning, teachers have utilized technological developments, namely several times using LCD projectors to present material, teachers also sometimes provide material in the form of pictures or videos. However, the media displayed by the teacher is still not attractive, it was evident during the observation that some students still did not pay close attention to the teacher's explanation.

Flipbook is a powerful software designed to convert PDF (Portable Document Format) files to alternating pages of digital publications. This application can change the appearance of PDF files to be more attractive like a real book, making electronic books with this application is relatively easy. Not only that, but flipbooks can also make PDF files look like digital magazines, company catalog flipbooks, digital catalogs, and others. By using the application, the media display will be more varied, not only text, images, sound, and video can also be inserted in this media so that the learning process will be more interesting (Ramdania, 2013). The flipbook media developed by researchers is tailored to the needs of students to overcome student problems regarding understanding the material. In addition, the media developed by researchers is also gamification-based, in which there are games or games. This is intended for learning activities so that they are not monotonous (Playing while learning).

Gamification can increase student engagement to learn directly through interaction with the media. Because this gamification contains components in the form of games, this model can make students motivated and interested in learning and make students more active with the concept of learning while playing (Pratomo, 2018:64). The game in question is in the form of a game "around Indonesia" students are asked to answer questions related to the material correctly and if it is correct the student advances one step from one region to another if it is wrong to stay in one area and not be able to continue the journey to other areas and other games, this can affect students' memory in learning. This gamification is contained in the digital flipbook





media developed by researchers, especially in the material "Cultural Diversity around me".

The theoretical basis underlying the use of learning media is Bruner's theory which explains that the use of media will make students gain new experiences in learning. According to Bruner, there are main levels of learning that interact with each other to gain new experiences (Knowledge, Skills, and Attitudes), namely direct experience (Enactive), Picture Experience (Iconic), and abstract experience (Symbolic). The selection of a model that follows the characteristics of students is an important thing in learning. One model that can provide space for students to interact directly during learning is the gamification learning model (Ristiana & Dahlan, 2021:129).

Guided by research that has been conducted (Riza, 2019) with the title "Development of Digital Book Learning Media Using Kvisoft Flipbook Based on Problem-Solving" The results of the research that have been carried out are the acquisition of the percentage of media validation results getting 86%, material validation getting 86% and student response getting a percentage of 85%. The results of the research stated that the media was interesting to use for learning support. The equation of this research with the research to be conducted by researchers is that both use digital flipbook media to support learning. The difference is that the research that has been done is based on problem solving by involving junior high school students while the research conducted by researchers is based on gamification and involves elementary school students. Other similar research was also conducted by (Aperta & Amini, 2021) With the title "Development of Integrated Thematic Learning Media Based on Kvisoft Flipbook Maker Pro in Class IV SD" The results of the research are that the developed media get a very practical category with a average value of 97.14% and 96.13%. The equation of this research with the research to be conducted by researchers is that both involve grade IV students in their research. The difference is that in the research that has been done, there are no games or games in the media. The renewal of the media that has been developed by researchers with other media is that this media is based on gamification, in the media, the game has levels - levels of levels. Based on the exposure to the needs analysis and previous research described above, researchers are interested in developing learning media, researchers take material according to what is in the book. Researchers are interested in taking the research title "Development of Gamification-Based Digital Flipbook Media on IPAS (Natural and Social Sciences) Material.

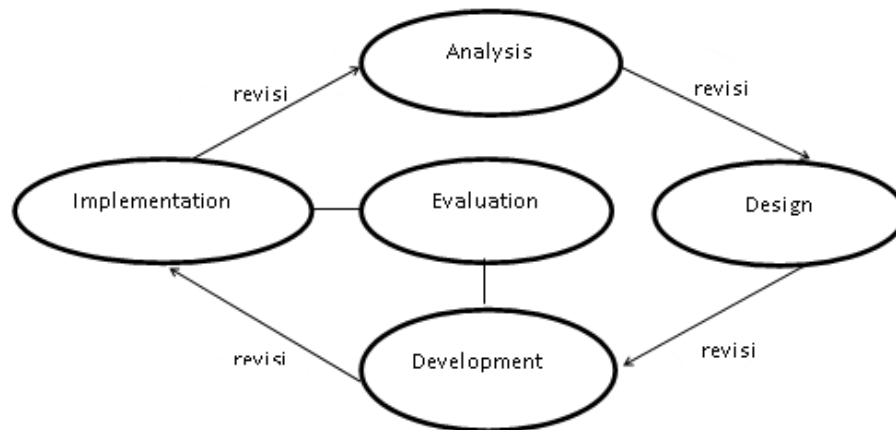
## **METHOD**

The use of models in research is used by researchers as a guide for development steps. The model used as a procedure for conducting research and development is useful for providing suggestions for improving a product for the better. (Punaji, 2012). Models are very important to use because using models will realize more structured development and research steps.

The ADDIE development model has five steps, namely analysis, design, development, implementation, and evaluation. The five stages are interrelated. The reason for using the ADDIE model as a guideline for researchers is to refer to the opinion of the researchers. Branch (2009:3) states that product development using the



ADDIE model is the right choice for developing media and other learning resources. Another opinion (Tegeh, 2014:41) said that in this model between stages, it is easy to understand, thus when developing a product it will make it easier for researchers in each process. In addition, the ADDIE model is suitable as a guideline for developing media such as teaching materials, modules, multimedia, and others. at the evaluation stage in the ADDIE model step is carried out at each stage of development The ADDIE model is a model used by researchers to develop digital flipbook media products.



Gambar 1. Prosedur Penelitian Model pengembangan ADDIE

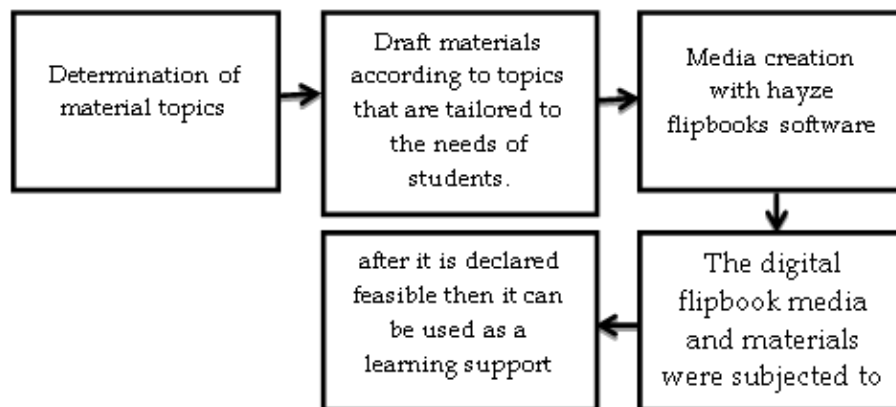


Figure 2. The flow of media development





## RESULTS AND DISCUSSION

The following are the results of the development of several parts of the content of digital flipbook media products that have been developed by researchers:






**Table 1. Media Flipbook Digital**

No	Flipbook Media Menu Image	Description
1.	 <p>Indonesia memiliki keanekaragaman budaya. Banyak suku bangsa dengan bahasa, pakaian adat, rumah adat, makanan dan kesenian yang berbeda-beda. Keanekaragaman ini salah satunya disebabkan karena tempat tinggal yang berbeda-beda. Setiap pulau di Indonesia mempunyai perbedaan keadaan alam.</p>	Flipbook media display explains that Indonesia has a lot of diversity
2.		Display of flipbook media that explains the benefits, ways of preservation, and tolerance.
3.		A display that shows batik in Indonesia
4.	<p><b>DIBAWAH INI MERUPAKAN CONTOH-CONTOH KERAGAMAN BUDAYA DAN KEARIFAN LOKAL DALAM BENTUK</b></p> <ul style="list-style-type: none"> <li>ritual atau upacara adat</li> <li>Baju adat</li> <li>Rumah Adat atau rumah tradisional</li> <li>Kesenian daerah di Indonesia</li> <li>Senjata daerah</li> </ul> 	Display that shows examples of cultural diversity and local wisdom in Indonesia.



No	Flipbook Media Menu Image	Description
5.	<p><b>BAJU ADAT JAWA</b></p> <p><b>BAJU ADAT JAWA</b></p> <p><b>BAJU ADAT JAWA</b></p> <p><b>BAJU ADAT JAWA</b></p> <p><b>BAJU ADAT JAWA</b></p> <p><b>BAJU ADAT JAWA</b></p> <p><b>BAJU ADAT JAWA</b></p>	Display that shows traditional clothes
6.	<p><b>RUMAH ADAT JAWA</b></p> <p><b>RUMAH KEBAYA</b></p> <p>Rumah Kebaya dari DKI Jakarta mengusung corak khas suku Betawi. Atap dari rumah ini menyerupai pelana terlipat dan memiliki corak-corak yang khas seperti kebaya.</p> <p><b>RUMAH JOGLO</b></p> <p>Rumah joglo Merupakan rumah adat Jawa Timur. Ciri khas dari Rumah Joglo ini terletak pada bentuk dan ukurannya yang unik dan juga makna seni yang tinggi.</p>	Media display showing Javanese traditional houses
7.	<p><b>BAJU ADAT SUMATERA</b></p> <p><b>PAKAIAN ULEE BALANG</b></p> <p>Pakaian khas dari Nanggroe Aceh Darussalam. Baju yang dikenakan untuk laki-laki diberi nama baju Linto Baro, sedangkan baju perempuan bernama Dara Baro.</p> <p><b>BAJU BATABUE</b></p> <p>Baju kurung yang diliasi sulaman dari benang emas. Terdapat berbagai corak dan motif yang berbeda pada baju batabue.</p>	Media display showing traditional Sumatran clothes.
8.	<p><b>RUMAH ADAT PAPUA</b></p> <p><b>RUMAH HANOI</b></p> <p>Rumah adat dari provinsi papua. Rumah ini berbentuk mengerucut dengan bagian atas ditutupi jerami kering. Atapnya mirip dengan batok kelapa dan tidak terlalu tinggi agar dapat menghangatkan bagian dalam rumahnya.</p>	A display showing traditional houses in Papua.



No	Flipbook Media Menu Image	Description
9.	 <p><b>BAJU ADAT NTB &amp; NTT</b></p> <p><b>PAKATAN SUKU DAWAN</b> Baju adat khusus untuk pria bernama baju Amarasi. Baju ini terdiri dari selendang kain tenun dari dan baju bodo. Sedangkan baju yang digunakan oleh kaum wanita terdiri dari sarung tenun, selendang, dan kebaya.</p> <p><b>BAJU LUMBUNG</b> Baju adat Lumbung adalah pakaian daerah NTB yang pakai oleh kaum wanita pada waktu penyambutan kedatangan tamu dari pada saat upacara adat yang dikenal dengan sebutan upacara Mendalin atau Nyonglot.</p>	Media display showing traditional clothes of NTB and NTT regions

In the table above are some of the parts contained in the developed media that have been declared worthy of being used as learning support by expert lecturers. The following describes the results of the validation test

### **Validation of Digital Flipbook Media**

This digital flipbook media validation test was conducted by researchers in July 2023. The results of the media validation in the form of a percentage score are used to determine the criteria and level of validity by giving a percentage score assessment and suggestion comments by filling out a validation questionnaire. In table 4.2, the results of the flipbook media validation test are described:

**Table 2.** Media validation test results

No.	Assessment aspect	Score
1.	Communication	13
2.	Design	22
3.	Packaging Format	14
<b>Total</b>		<b>49</b>
<b>Maximum number</b>		<b>56</b>
<b>Percentage</b>		<b>87,5%</b>

Based on Table 2, the results of media validation with a total score of 49 with a percentage calculation obtained 87.5% including the criteria "Very Good" Thus it can be used to support learning on the condition of making minor revisions before being tested following the suggestions given.

### **Material Validation Test Results**

Material validation was carried out by researchers in July 2023. The results of the material validation in the form of a percentage score are used to determine the criteria and level of validity of the material developed. In table 2, the results of the material validation test are presented:



**Table 3.** Material Validation Results

No.	Assessment aspect	Score
1.	Goal suitability	14
2.	Curriculum	8
3.	Material content	17
<b>Total</b>		<b>39</b>
<b>Maximum number</b>		<b>44</b>
<b>Percentage</b>		<b>88,63%</b>

Based on Table 3, the results of the validation of learning support materials with a total score of 39 with a percentage calculation obtained 88.63%, including the criteria for "Very Good" material, so that it can be utilized or used as learning support.

### **Implementation**

The following table shows the results of students' evaluation questions at the first meeting:

**Table 4.** Evaluation Results of Meeting 1

No	Student's name	Evaluation score
1	ABN	85
2	AC	90
3	BGF	80
4	CD	70
5	DNFI	65
6	ED	85
7	FDS	95
8	FS	80
9	GBK	85
10	HZ	100
11	KNL	80
12	MC	65
13	KL	100
14	SV	85
15	WRD	95
16	YT	75
<b>Number of learners with Minimum Completeness Criteria</b>		<b>13</b>
<b>Total number of Students</b>		<b>16</b>
<b>Percentage</b>		<b>81,25%</b>

Referring to the results obtained in Table 4 show that 13 students have passed the Minimum Completeness Criteria while 3 students have not passed the Minimum Completeness Criteria. These results obtained a percentage of 81.25% included in the category "Completely".

The following table shows the results of students' evaluation questions at the second meeting:

**Table 5.** Evaluation Results of Meeting 2

No	Student's name	Evaluation score
1	ABN	90
2	AC	85
3	BGF	85
4	CD	75
5	DNFI	70
6	ED	90
7	FDS	90
8	FS	75
9	GBK	95
10	HZ	95
11	KNL	85
12	MC	70
13	KL	100
14	SV	95
15	WRD	90
16	YT	80
Number of learners with Minimum Completeness Criteria		14
Total number of Students		16
Percentage		87,50%

Referring to the results obtained in Table 5 show that 14 students have passed the Minimum Completeness Criteria while 2 students have not passed the Minimum Completeness Criteria. These results obtained a percentage of 87.50% included in the "Highly Completed" category.

From the 1st and 2nd meetings, each has a different percentage of completeness. The following is the total percentage of completeness of the application of digital flipbook media

**Table 6.** Recapitulation of evaluation results

No	Learning	Percentage score
1.	1st Meeting	81,25%
2.	2nd meeting	87,50%
Total percentage		168%
Number of data		2
Average percentage		84%

Based on the calculations presented in Table 6 above, the first meeting got a percentage of 81.25% while the second meeting got a percentage of 87.50%. These results have increased in the results of working on student evaluation questions. The average result of the assessment received a percentage score of 84%. These results based on the categories described in the previous chapter are included in the "Completed" category.

After the product trial was completed, students and teachers were given a user response questionnaire sheet. The user response filled in by the teacher aims to determine the level of practicality aspects of the flipbook media developed. The user response questionnaire filled in by students aims to determine the attractiveness of



the flipbook media developed by researchers. The following describes the user response to digital flipbook media.

### Teacher Response

The results of the user response questionnaire regarding the practicality were filled in by the fourth-grade teacher of SDN Balarjosari 1. The following are the results of the assessment

**Table 7.** Results of Teacher Response Questionnaire Assessment

No.	Assessment aspect	Score
1.	Use of flipbook media	8
2.	Contents of flipbook multimedia	7
3.	User reaction	15
<b>Total</b>		<b>30</b>
<b>Maximum number of scores</b>		<b>32</b>
<b>Percentage</b>		<b>93%</b>

In Table 7 which has been described above, it can be seen that the level of practicality based on the assessment given by the teacher obtained a score of 30 with a percentage of 93%, this percentage is included in the "Very Practical" category.

### Student's Response

In the following table are the results of the user response questionnaire assessment regarding the attractiveness filled in by 16 students of SDN Balarjosari 1, which are described below:

**Table 8.** Results of Student Response Questionnaire Assessment

No	Student's name	Scores given
1	ABN	90%
2	AC	83%
3	BGF	100%
4	CD	100%
5	DNFI	96%
6	ED	75%
7	FDS	84%
8	FS	75%
9	GBK	90%
10	HZ	81%
11	KNL	83%
12	MC	86%
13	KL	100%
14	SV	90%
15	WRD	75%
16	YT	80%
<b>Total percentage</b>		<b>1388</b>
<b>Total data</b>		<b>16</b>
<b>Final Result</b>		<b>86,75%</b>

Based on Table 8 which has been presented above regarding the results of user responses given by student assessments, the total percentage obtained is 86.75%, the percentage obtained is in the "Very Good / Very interesting" category, thus digital flipbook media can be concluded to attract students' interest in learning and can be used in learning activities, especially IPAS class IV Chapter 6.





## **Evaluation**

Evaluation is the last stage of the ADDIE model. Evaluation is carried out at each stage in this model. The evaluation stage of the analysis stage has the aim of obtaining information data regarding the analysis of student needs, especially class IV SDN Balearjosari 1. The results of the evaluation at the first stage are the analysis stage researchers can conclude from the results of interviews and observations in the field.

Evaluation at the design stage is carried out when determining the Basic Competencies as a guideline for developing learning support media following the characteristics of grade IV students. In addition to determining the subject matter, evaluation at the design stage is carried out to determine the appropriate type of media to be developed.

The evaluation carried out at the development stage is that researchers conduct media validation tests as well as validation by expert lecturers in their fields. The validation is used to determine the assessment of the feasibility/validity of the media developed before the trial. Based on the validation results obtained, digital flipbook media is suitable for learning support.

Evaluation at the implementation stage was carried out with a total of 16 subjects of class IV students of SDN Balearjosari 1 Malang. The implementation activity is carried out to find out the success of developing digital flipbook media as a learning support through the completeness of student learning outcomes. At this stage, the researcher also provides a user response questionnaire addressed to class IV teachers and students. The assessment that has been given by filling in the checklist in the questionnaire has the aim of knowing the level of practicality and attractiveness of digital flipbook media. After the evaluation at each stage, the next step taken by the researcher is to conduct an analysis based on the data that has been obtained.

## **CONCLUSION**

The result of this research and development is a media product that utilizes technological developments developed using the Hayze flipbooks application with class IV IPAS Chapter 6 material about "Indonesia is Rich in Culture". In this flipbook media, there are instructions for using the media that are useful to facilitate users, practice evaluation questions, and games related to the material and on this media, there is a developer profile. The digital flipbook media developed is easy to use in learning activities can be used in the school environment or outside school, can be accessed on laptops and mobile phones, students can interact directly with the media.

In this flipbook media, there are videos, texts, and images. Technology-based media has many functions and benefits because in the media there are components that combine several learning styles of students into one. This follows the opinion expressed by Rusman (2012: 149) that there are several advantages of media in digital form, namely that it can bring out the independent nature of student learning because it does not depend on the teacher and follows the different styles of student characteristics. This follows the opinion of Karjani (2020: 110) that the use of media that follows the learning style and characteristics of students will affect the receipt of information and the learning outcomes. In this study, there are 4 aspects or indicators including validity or feasibility obtained by the percentage of assessments when



conducting media and material validation tests, completeness of learning outcomes obtained from the results of evaluation work, practicality aspects obtained from filling out teacher response questionnaires and aspects of attractiveness obtained from filling out student response questionnaires.

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