Development of hair dyeing teaching materials using peek a boo technique based on e-books

Rika Riwayani [1*], Aqilah Muthiah Arfiyadie[2]

[1,2] Universitas Negeri Makassar, Indonesia

Email: rika.riwayani@unm.ac.id[*]

*Corresponding author

ABSTRACT

This study is a type of Research and Development (R&D) research aimed at developing and evaluating teaching materials for hair coloring using the peek-a-boo technique based on e-books for UNM Cosmetology students. The objectives of the study are to identify the procedure for developing these teaching materials and to assess student responses to the e-book-based materials. The research employs the ADDIE development model, which involves the stages of analysis, design, development, implementation, and evaluation, to create effective teaching materials. The subjects of this study were 13 undergraduate students from the 2019 Cosmetology class in the Department of Family Welfare Education, Faculty of Engineering, Makassar State University. The data were analyzed using descriptive quantitative techniques. The findings indicate that the development of e-book-based teaching materials follows the ADDIE model, which includes an analysis of the needs of lecturers, students, and the learning process. The feasibility test conducted by students resulted in a score of 93%, categorized as "Very Good," demonstrating the e-book's suitability for use in learning activities. Additionally, student responses to the e-book-based teaching materials were highly positive. Overall, the evaluation by the 13 undergraduate students showed that the hair coloring e-book using the peek-a-boo technique is effective and can be utilized as a learning resource in educational activities.

Keywords: Development Teaching Materials, Hair Coloring, Peek a Boo, E-Book

INTRODUCTION

Education plays a vital role in shaping the character of a nation's generation. Therefore, in the educational process, it is highly expected that educators can facilitate learning optimally (Jalil & Anantama, 2021). Learning media refers to any tool that can be used as an intermediary to effectively deliver learning materials to students (Pagarra et al., 2022). Based on their characteristics, learning media can be categorized into audio, visual, audio-visual, and multimedia. An e-book is a digital publication of a textbook (Sanuaka et al., 2017).

The presence of e-books facilitates both readers and writers in collecting and distributing books. Writers can sell or publish their works through e-books, while readers and knowledge seekers can

easily access information via the internet (Salamiyah & Kholiq, 2020). he use of e-books also contributes to the development of digital learning media in today's modern era (Mahardika et al., 2022). Furthermore, e-books serve as a resource for independent learning and can positively influence learning motivation (Azrai & Refirman, 2013).

Family Welfare Education is one of the departments in the Faculty of Engineering at the State University of Makassar. This department offers three concentration areas: make-up, fashion, and culinary arts. Hair coloring is a compulsory course within the make-up concentration of the Family Welfare Education Department.

Based on observations of undergraduate students in the make-up concentration of the Family Welfare Education Department at the Faculty of Engineering, State University of Makassar, it was found that students' creativity in hair coloring practices needs improvement. This condition is attributed to monotonous teaching materials and a lack of supporting references to enhance the existing resources.

The purpose of developing e-books is to facilitate the dissemination of information and improve the learning process for users. An e-book, as an electronic book in soft copy format, can be accessed using a computer, tablet, or smartphone (Merdekawati et al., 2022). Producing printed books is relatively expensive due to the use of conventional methods, whereas creating e-books is significantly more cost-effective and can even be free. With e-books, the teaching and learning process becomes more efficient. Lecturers can prepare lecture materials in e-book format and easily share them with students.

From the students' perspective, studying becomes much easier as they can access the material in e-book form anytime and anywhere. Based on the results of an interview with the lecturer in charge of the hair coloring course, it was revealed that the learning process for this course primarily utilizes teaching materials such as job sheets, papers, and PowerPoint presentations. While these materials have met the current learning needs, additional teaching resources are necessary to provide more references for students and lecturers, as well as to enhance the overall learning process.

Building on the aforementioned theory, the author is interested in conducting research on developing hair coloring materials focusing on the peek-a-boo technique in the form of an e-book. This research will be carried out in the Family Welfare Education Department, with a concentration in Makeup, aiming to help students broaden their knowledge and skills in hair coloring. Beautiful and attractive makeup will lose its value if it is not complemented by a well-maintained and styled hair appearance.

Having healthy hair creates a beautiful and attractive impression (Kusantati et al., 2008). Hairdressing is a field of study that focuses on arranging and enhancing hairstyles and hair conditions to achieve a better, more beautiful, and charming appearance. It aims to create balance,

harmony, and symmetry with other parts of the body (Rostamailis et al., 2008). Tranggono and Latifah (as cited Nabilah et al., 2020) describe hair as a crown for a woman's head. Beautifying hair enhances one's appearance, making it fashionable and trendy.

One popular hair enhancement method is hair dyeing. Hair dye preparations are cosmetic products used in hairdressing to alter the natural color of hair. The dye component in these preparations is crucial, as creating attractive and harmonious color effects is a primary goal for cosmetic users (Mufidah et al., 2016).

In modern times, hair coloring has become highly popular among the general public. It is a trend embraced by both men and women of all ages (Dinda & Yupelmi, 2023). Hair coloring not only enhances appearance but also boosts self-confidence. It can be tailored to individual preferences and current trends, which continuously evolve over time (Arisa, 2021). Hair coloring techniques include not only full-color applications but also methods like peek-a-boo, ombre, balayage, and others (Ulfah, 2024).

One emerging trend in hair coloring is the peek-a-boo technique. Peek-a-boo coloring involves hidden shades that become visible only when the hair is lifted (Usman et al., 2024). However, hair coloring is a complex process that requires thorough knowledge of different products, techniques, and procedures (Helen & Deli, 2023). To address this need, the development of teaching materials on the peek-a-boo hair coloring technique in the form of an e-book is proposed. This e-book is intended to serve as a learning resource to support the mastery of hair coloring competencies.

METHOD

The research conducted is a type of research and development or Research and Development (R&D). According to (Borg & Gall, 1983) development research in education is a process used to develop and validate educational products. The ADDIE development method comprises the stages of analysis, design, development, implementation, and evaluation, with specific descriptions for each stage (Tegeh et al., 2014). In this study, the development focuses on creating an e-book for the Peek-a-Boo Hair Coloring Technique course.

1. Test Subjects

The subjects of this research and development study include material experts, media (design) experts, lecturers of the Hair Coloring course, and undergraduate students in the Cosmetology program within the Family Welfare Education Department, Faculty of Engineering, Makassar State University.

2. Research Instrument

The research instrument used in this study was a questionnaire distributed to material experts, media experts, and students who had taken the Hair Coloring course as respondents. The data

sources were obtained from these three groups of respondents. The components assessed varied by respondent type:

- **Students** evaluated the suitability of the presentation.
- **Material experts** assessed the relevance of the content and language.
- **Media experts** evaluated the appropriateness of the graphics.

3. Data Analysis Techniques

Data analysis is the process of transforming data into new information, making the data's characteristics easier to understand and more useful for solving problems, particularly in research contexts. The data analysis technique used in this study is quantitative analysis. Quantitative analysis involves collecting research data through a series of instruments such as tests or questionnaires (Sekaran & Bougie, 2016).

RESULTS AND DISCUSSION

This development research addresses two main questions: (1) What is the procedure for developing teaching materials for hair coloring using the peek-a-boo technique in an e-book format for UNM Cosmetology students? and (2) How do UNM Cosmetology students respond to these e-book-based teaching materials? The primary output of this research is an e-book-based teaching material designed for the "Hair Coloring Techniques" course, specifically focusing on the peek-a-boo technique. The development of these teaching materials follows the ADDIE development model.

According to (Maribe, 2009) the ADDIE model consists of five stages: **Analysis**, **Design**, **Development**, **Implementation**, and **Evaluation**. Each stage includes a series of activities forming a systematic process for developing e-book-based teaching materials for the peek-a-boo hair coloring technique. The activities conducted at each stage of the development process are detailed as follows:

1. **Procedure for Developing Teaching Materials for Hair Coloring Using the Peek a Boo Technique Based on E-Books**

This research utilizes the R&D (Research & Development) approach, employing the ADDIE development method (Analysis, Design, Development, Implementation, and Evaluation). The stages involved in developing these teaching materials are as follows:

a. **Analysis**

1) Analysis of lecturer needs

Based on interviews conducted with lecturers who teach hair coloring courses, it was revealed that one of the main issues in the hair coloring learning process is the lack of effective learning media. The current teaching materials, such as job sheets, papers, and PowerPoint presentations, are not well-structured. Therefore, there is a need to develop

better learning media to provide additional references for both students and lecturers, thereby improving the learning process.

2) Analysis of student needs

Observations were conducted on students from the Bachelor of Cosmetology Study Program, Department of Family Welfare Education, Faculty of Engineering, Makassar State University, Class of 2019, who had taken hair coloring courses. The findings indicate that during the implementation of hair coloring practices, students' creative skills still require further development. This is evident from instances where some students achieved suboptimal results or failed to follow proper procedures during practice. This condition is attributed to the monotonous nature of the teaching materials and the lack of supporting references to complement the existing materials.

3) Analyze learning

Learning analysis is conducted to determine the level of creativity and motivation of students in the learning process. Based on the results of observations made by the researchers, it was found that students can be more creative and motivated in participating in learning if the learning media used are more engaging.

b. Design (Planning)

At the design stage, the researchers prepare the material that will be included in the learning-based material e-book. This e-book is designed using the Heyzine Flipbook application. In preparing the teaching material, there are several stages, namely:

1) Framework Preparation E-book

The presentation of the e-book is arranged sequentially, starting with the front cover, menu, foreword, table of contents, list of chapters (introduction, material, and evaluation), list of figures, list of tables, bibliography, and back cover.

2) Systematic Determination

The order of presentation of the material in e-book these are as follows:

    a) Introduction

    b) History of Hair Coloring

    c) Hair Coloring Techniques Peek a Boo

    d) Evaluation

3) Cover E-Book

The front cover of the e-book includes the title, composition team, logo, and an image. Meanwhile, the back cover consists of the logo, a description, and details about the department, faculty, and university. The front and back cover designs of the e-book are as follows:
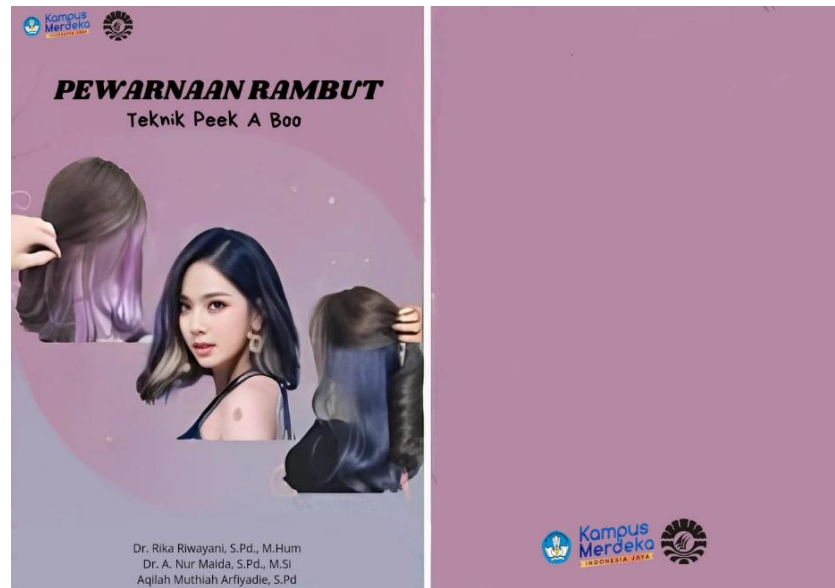
Figure 1 Cover E-Book

c. Development

The development stage aims to modify the working model of the e-book, which was outlined in the previous design stage. At this stage, feedback is needed through evaluation and revision of the e-book. The stages consist of expert appraisal and development testing.

d. Implementation

After the expert appraisal (validation) in the development stage, implementation is carried out through development testing. This stage was tested on 13 students majoring in Family Welfare Education in the undergraduate Cosmetology study program who had enrolled in a hair coloring course. The goal was to assess students' opinions about the developed teaching materials, particularly whether the e-book-based materials could be used in the learning process for hair coloring courses. The respondents in this study were students from the class of 2019.

e. Evaluation

The evaluation stages include formative and summative evaluation. Formative evaluation is carried out to collect data at each stage, which is then used for improvement. Summative evaluation is conducted on the program to determine its effect on student learning outcomes and the overall quality of learning. In this research, only formative evaluation was carried out, as this type of evaluation is related to the development research stage for improving the developed product.

2. Student Response to Products Developed

Student trials are conducted after obtaining valid results from trials carried out by material experts and media experts. The student or user trials are conducted to determine how students respond to the e-book teaching materials that were developed. The assessment results were evaluated by 13 undergraduate students from the Cosmetology Concentration of the Department of Family Welfare Education, class of 2019. The assessment covered the following aspects: material presentation, media/display, and benefits. The results are presented in the following table:

1) Aspects of Material Presentation

Table 1: Data from Student Eligibility Test Results on Material Presentation Aspects

No.	Assessment Aspects	R	N
1.	The instructions in this module made it easier for me study it	60	65
2.	This e-book explains the concept using illustrations related to Hair Coloring in everyday life	58	65
3.	The packaging of the modules in this module encouraged me to broader insight	62	65
4.	Relevant material helped me solve the problem regarding Hair Coloring in society	61	65
5.	The module material is coherent and systematic	59	65
6.	I can understand the material easily	60	65
7.	I easily understand the sentences used in module	57	65
8.	There are no ambiguous sentences in this module	60	65
9.	I can understand the terms used in the module	60	65
10.	The practice questions are relevant to the material provided	63	65
11.	Practice questions on the material	60	65
	Amount($\sum$)	660	715

In the aspect of material presentation, there are 11 assessment items. From the validation results obtained by media experts the results are as follows:

$$P = \frac{\Sigma R}{\Sigma N} \times 100\%$$

$$P = \frac{660}{715} \times 100\%$$

= 92% in the "Excellent" qualification with "Very Valid" equivalent

2) Media/Display Aspects

Table 2: Data on Student Eligibility Test Results for Media/Display Aspects

No.	Assessment Aspects	R	N
1.	The background on the cover is clear and does not interfere with the writing	59	65
2.	The cover background represents. Describes the contents of the module	58	65
3.	The writing on the cover is clear	64	65
4.	The text or writing in this module is easy to read	62	65
5.	The type and size in the module are correct	60	65
6.	The images, examples and illustrations provided are clear	59	65
7.	The pictures, examples and illustrations presented are interesting	62	65
8.	The pictures, examples and illustrations presented are neither too few nor too many	58	65
9.	The introduction is clear	61	65
10.	Presentation of material descriptions is clear and systematic	58	65
11.	The presentation of the exercises helped me find out my abilities	60	65
12.	The presentation of the bibliography helps me to find more information	62	65
	Amount($\sum$)	723	780

In the media/display aspect there are 12 assessment items. From the validation results from media experts, the following results were obtained:

$$P = \frac{\Sigma R}{\Sigma N} \times 100\%$$

$$P = \frac{723}{780} \times 100\%$$

= 93% in "Very Good" qualification with "Very Valid" equivalent

3) Benefit Aspect

Table 3: Data on Student Eligibility Test Results for Benefit Aspects

No.	Assessment Aspects	R	N
1.	I can understand the material Hair Coloring uses this module easily	62	65
2.	By using this module I am more interested in deepening it hair coloring	59	65
3.	I became interested in studying again when using this module	60	65
	Amount($\sum$)	181	195

In the aspect of material presentation, there are 3 assessment items. From the validation results from media experts, the following results were obtained:

$$P = \frac{\Sigma R}{\Sigma N} \times 100\%$$

$$P = \frac{181}{195} \times 100\% \quad 1690$$

= 93% in "Excellent" qualification with "Very Valid" equivalent

Based on the results of student responses to each aspect of the assessment, the total percentage of results from the student feasibility test on teaching materials for hair coloring techniques was obtained peek a boo based e-book that is:

$$P = \frac{\Sigma R}{\Sigma N} \times 100\%$$

$$P = \frac{660 + 723 + 181}{715 + 780 + 195} \times 100\%$$

$$P = \frac{1564}{1690} \times 100\%$$

= 93% in the qualification "Very Good" with the equivalent of "Very Decent"

Student Response Results

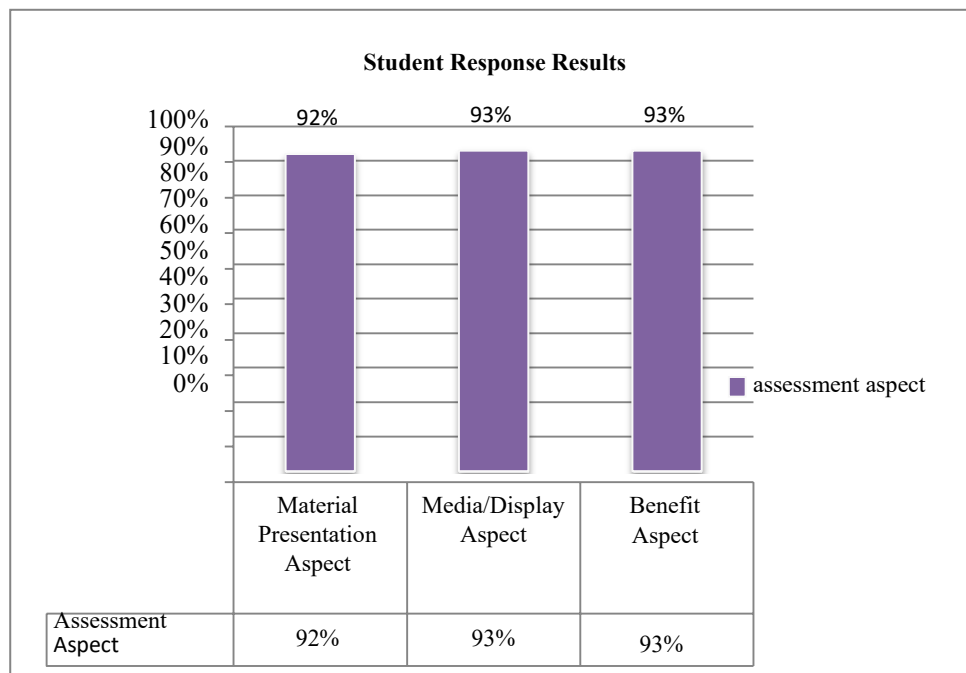| Assessment Aspect	Material Presentation Aspect	Media/Display Aspect	Benefit Aspect
	92%	93%	93%

Figure 2: Percentage Diagram of Student Response Results

Development of teaching materials for hair coloring techniques peek a boo based e-book Of course, it requires responses from students who have taken the hair coloring course to find out students' responses to it e-book which was developed based on the results of student research in the form of filling out a questionnaire consisting of 3 aspects including the presentation aspect with 11 statements, the media/display aspect with 12 statements, and the benefits aspect with 3 statements.Based on the results of the recapitulation of student responses to these 3 aspects, a success rate of 93% was obtained in the "Very Good" qualification with the equivalent of "Very Valid". The percentage results show that the teaching materials developed are effective for use based on the responses given.

CONCLUSION

Based on the results of the research and discussion that have been described, and considering the problems outlined in the problem formulation, the following conclusions can be drawn:

1. This research uses a research and development (R&D) method and refers to the ADDIE development model, which consists of five stages: Analysis, Planning, Development, Implementation, and Evaluation.

2. Student responses reached a feasibility level of 93%. The students' responses were very positive toward the e-book, and the overall assessment by 13 undergraduate students from the 2019 Cosmetology Concentration class indicates that the developed e-book can be used in learning activities. Based on the Likert scale percentage, the success rate in the "Very Good" qualification is equivalent to "Very Decent," indicating that the e-book and its material are suitable for use as a source in learning activities.

REFERENCE

Arisa, M. F. (2021). Pengaruh Perbandingan Hidrogen Peroksida dan Bleaching Terhadap Teknik Balayage Pada Rambut Virgin. *Angewandte Chemie International Edition, 6(11), 951–952.*

Azrai, E. P. & Refirman. (2013). Efektifitas Penerapan E- book sebagai Sumber Belajar Mandiri dalam Pembelajaran Biologi. *Semirata FMIPA Universitas Lampung*, 243–250.

Borg, W. & Gall, M. (1983). *Educational Research: An Introduction* (4th ed.). New York: Longman Inc.

Dinda, Z. R. & Yupelmi, M. (2023). Perbandingan Ekstrak Warna Daun Jati (Tectona Grandis) dan Ekstrak Warna Daun Pacar (Lawsonia Inermis L) Terhadap Hasil Pewarnaan Rambut. *Student Scientific Creativity Journal*, *2*(1), 101–113. https://doi.org/10.55606/sscj-amik.v2i1.2651

Helen & Deli. (2023). Perancangan dan Implementasi Media Pembelajaran tentang Pewarnaan Rambut Artistik di SMK Negeri 2 Batam. *National Conference for Community Service*, *5*(1), 166–174.

https://journal.uib.ac.id/index.php/nacospro/article/view/7918%0Ahttps://journal.uib.ac.id/index.php/nacospro/article/download/7918/3434

Jalil, M. & Anantama, A. (2021). Bimbingan Belajar di Era New Normal Menurut Ajaran Islam. *Jurnal Bimbingan Penyuluhan Islam*, *2*(2), 285-301. https://doi.org/10.32332/jbpi.v2i2.2601

Kusantati, H., Prihatin, P. T., & Wiana, W. (2008). *Tata Kecantikan Kulit*. Direktorat Pembinaan Sekolah Menengah Kejuruan.

Mahardika, A. I., Saputra, N. A. B., Muda, A. A. A., Riduan, A., Lazuardi, N. S., & Nurmalinda. (2022). Pelatihan Pengembangan Media Pembelajaran Digital E-book Menggunakan Flipbook PDF Professional bagi Guru di Kota Banjarmasin. *Kawanad: Jurnal Pengabdian Kepada Masyarakat*, *1*(2), 124–134. https://doi.org/10.56347/kjpkm.v1i2.59

Maribe, B. R. (2009). *Instructional Design: The ADDIE Approach*. New York: Spinger Science & Business Media, LLC.

Merdekawati, A., Kumalasari, J. T., Dhiana, A. S., Sugeng, I. S., & Lestari, S. W. (2022). Pemanfaatan Penyusunan E-Book Interaktif Sebagai Media Pembelajaran Remaja Binaan Yayasan Satuasa Peduli Bangsa. *Jurnal Pengabdian Masyarakat Formosa (JPMF)*, *1*(2), 135–144. https://journal.formosapublisher.org/index.php/jpmf

Mufidah, A. F., Herawati, E., & Ambarwati, N. S. S. (2016). Formulasi dan Evaluasi Sediaan Pewarna Rambut Ekstrak Kulit Buah Naga Merah (Hylocereus Polyrhizus). *Jurnal Tata Rias, 10*(2), 1-23. DOI:10.21009/10.2.2.2009

Nabilah, F., Herawati, E., & A, N. S. S. (2020). Formulasi dan Evaluasi Sediaan Kosmetik Pewarna Rambut dari Ekstrak Kulit Batang Secang (Caesalpinia sappan L). *Jurnal Tata Rias*, *10*(1), 48–60. https://doi.org/10.21009/10.1.5.2009

Pagarra, H., Syawaluddin, A., Krismanto, W., & Sayidiman. (2022). *Media Pembelajaran*. Makassar: Badan Penerbit UNM.

Rostamailis, Hayatunnufus, & Yanita, M. (2008). *Tata Kecantikan Rambut Jilid 1 untuk SMK*. Direktorat Pembinaan Sekolah Menengah Kejuruan. http://dx.doi.org/10.1016/j.biochi.2015.03.025%0Ahttp://dx.doi.org/10.1038/nature10402%0Ahttp://dx.doi.org/10.1038/nature21059%0Ahttp://journal.stainkudus.ac.id/index.php/equilibrium/article/view/1268/1127%0Ahttp://dx.doi.org/10.1038/nrmicro2577%0Ahttp://

Salamiyah, Z. & Kholiq, A. (2020). Pengembangan Ecthing (E-Book Creative Thinking) untuk Meningkatkan Keterampilan Berpikir Kreatif Peserta Didik SMK Pada Materi Hukum Ohm. *IPF: Inovasi Pendidikan Fisika*, *09*(03), 342–348.

Sanuaka, A. A., Ariawan, K. U., & Sutaya, W. (2017). Pengembangan Media Pembelajaran Electronic Book (E-Book) Interaktif Multimedia dalam Mata Pelajaran Teknik Animasi 3D dan Teknik Animasi 2D di Jurusan Multimedia SMK Negeri 3 Singaraja. *Jurnal Pendidikan Teknik Elektro Undiksha*, *6*(2). https://doi.org/10.23887/jjpte.v6i2.20234

Sekaran, U. & Bougie, R. (2016). Research Methods for Business: A Skill-Building Approach. In *Leadership & Organization Development Journal 7th ed.*, *34*(7). John Wiley & Sons Ltd. https://doi.org/10.1108/lodj-06-2013-0079

Tegeh, I. M., Jampel, I. N., & Pudjawan, K. (2014). *Metode Penelitian Pengembangan Pendidikan*. Yogyakarta: Graha Ilmu.

Ulfah, N. A. (2024). Korelasi Rambut Berwarna dengan Stigma Kecantikan Perempuan Urban: Studi Kasus Kota Semarang. *Jurnal Multidisiplin Dehasen (Mude)*, *3*(4), 307–316.

Usman, S. H. R., Armandari, M. O., & Atmanto, D. (2024). Hubungan Intensitas Pewarnaan Rambut Artistik dengan Tingkat Kepercayaan Diri Mahasiswi Pada Rumpun IKK UNJ. *Adijaya: Jurnal Multidisiplin*, *02*(03), 391–402.