Development of Section Comb Media as a Project Tool in Learning Hair Coloring

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Article Info	Abstract
	This research was motivated by the suboptimal achievement of hair coloring learning competencies. To address student difficulties in learning hair coloring, it is necessary to develop learning media relevant to student needs, namely section combs. This research aims to: develop section combs as teaching aids in hair coloring learning; determine the feasibility of section combs as teaching aids in hair coloring learning; determine the effectiveness of section combs in improving students' hair coloring skills; and determine the practicality of section combs. This research uses the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) development model. Data analysis used in this study consisted of: quantitative descriptive analysis to determine the feasibility of section combs; N-Gain and independent sample t-tests to determine the effectiveness of section combs; and percentage distribution analysis to determine practicality. The feasibility test results found that the section combs were categorized as very feasible. The results of the effectiveness test found an N-Gain value of 58.47, included in the fairly effective category, and a T-Test value of 24.787, there was a significant increase between the average N-Gain of the experimental class and the control class. The practicality test of the section comb teaching aid found a value of 84, included in the "very practical" category.

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INTRODUCTION

Vocational education or Vocational High School (SMK) is a formal secondary education that prepares students with specific vocational skills to enter the workforce and develop their careers after working.(Susanti dalam Arifah., 2024). Menurut Yahya (2023) The primary focus of vocational education is the development of practical skills that can be applied in the workplace. One of the programs offered at vocational schools is Beauty and Spa. In the hair beauty industry, hair colouring is a popular trend among men and women, regardless of age.(Hamsar dkk.,2023). Menurut Eli Suprida (2020) Looking different is the primary goal of someone who dyes their hair. Hair colouring, or hair dyeing, is changing hair colour.(Kusumadewi dalam Hamsar dkk., 2023).

The object was discovered based on observations made by researchers during hair colouring practical lessons in Year XI Beauty Studies at SMK Negeri 1 Salatiga. That many students had not yet mastered hair colouring techniques correctly and adequately. This is evident from the average practical score of 50 out of 66, with 75.53% of students scoring below the Learning Objective Achievement Criteria (KKTP) of <78. Furthermore, based on the results of the researcher's interview with the L'Oreal hairdressing programme industry trainer on 7 October 2024 at SMK Negeri 1 Salatiga, the results of the hair colouring practice showed that 66.6% of the 30 students who participated in the hairdressing programme, or 20 students, were not yet competent in performing hair colouring in accordance with L'Oreal industry standards. The interviews with five students in the Hair Beauty Skills competency revealed that most of them experienced difficulties in consistently estimating the thickness of hair sections.

The suboptimal achievement of learning competencies is due to the low quality of hair colouring results, as evidenced by the results of hair colouring practice, namely uneven colouring. This is in line with the opinion that Accuracy in sectioning the hair affects the results of hair colouring, because if the hair is sectioned too thickly, it will result in uneven absorption of the hair dye. If the hair is sectioned too thinly, it will hinder the hair colouring process.

Taking the right section is a technical skill that requires training and experience. Students who are beginners in the field of hair and beauty find it difficult to form precise sections. To overcome the difficulties students face in sectioning during hair colouring lessons, there is a need for learning media relevant to the students' needs. This is in line with Candra's opinion.(2022) Who argues that learning media is anything that can be used to convey messages from a teacher to students that can stimulate their minds, feelings, attention and interest, thereby facilitating the learning process. According to Nurfadhillah et al., (2021) learning media serves to help students understand abstract concepts.

One form of educational media for hair colouring is a comb teaching aid. A teaching aid can be defined as a tool that assists in teaching and learning to make it more effective (Sudjana dalam Yamomaha Telaumbanua, 2020). According to Kaltsum (2017), The use of teaching aids in learning can enhance students' imagination and creativity. The use of appropriate teaching aids will significantly assist in the learning process.(Aulia & Astuti,2023).

The tool that students often use in hair colouring lessons is a metal tail comb. The comb used so far is a general-purpose comb that only serves to help detangle hair and divide it into sections. The disadvantage of this comb is that it is difficult to divide hair precisely, as it does not have specific sizes for sections. Therefore, an innovative comb is needed to help students section hair, improving the quality of hair colouring results with greater precision.

RESEARCH METEOROLOGY

The method used in this study was Research and Development (R&D). Research and Development (R&D) with the ADDIE development model (Analysis, Design, Development, Implementation and Evaluation). This product was implemented for 66 students in the Grade XII Beauty and Spa programme at SMK Negeri 1 Salatiga, consisting of 33 students in the experimental and 33 students in control

classes. The research design used in this study was the pretest-posttest control Group Design.

Tabel 3.1 Pretest Posttest Control Group Design

Kelas	Pre-Test	Perlakuan	Post-Test
Eksperimen	O1	X	O2
Kontrol	O3		O4

Source : Yasri dan Mulyana (2016:141)

Description :

O1   : *pre test* experimental class

O3   : *pre test* control class

X   : treatment with a developed practical tool

O2   : *post test* experimental class

O3   : *post test* control class

The data in analysis used in this study consisted of: quantitative descriptive analysis to determine the feasibility of the comb section teaching aid; N-Gain test and independent sample T-test to determine the effectiveness of the comb section teaching aid; and percentage distribution to determine its practicality.

RESULTS AND DISCUSSION

Research Results
Development of Comb Sections as Hair Colouring Teaching Aids

The development of the comb section in this study used the Research and Development (R&D) method. Research and Development (R&D) used the ADDIE (Analysis, Design, Development, Implementation and Evaluation) development model. This study was conducted by analysing the curriculum and the needs of students. The product design in this study involved designing a comb that could be folded so that users could choose one according to their needs. The comb section consisted of four parts: the comb tail to produce sections of 0.5 cm, 1 cm, and 2 cm, and a regular serrated comb.
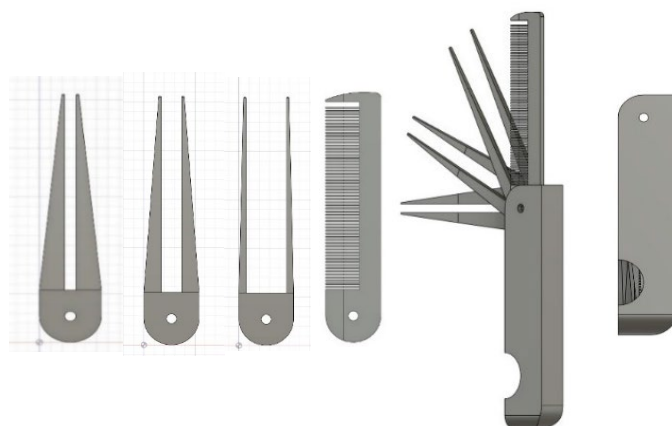

Image 1. Comb design with section sizes of 0.1 cm, 1 cm, 2 cm, regular comb, finished comb in a book and closed condition

The product development carried out in this study consisted of two stages, namely product creation and product validation. Product validity was assessed by five media experts and five subject matter experts. Product validity was measured using the Content Validity Index (CVI). The validity results obtained by media experts were a score of 0.90, which is included in the 'valid' criteria, and reliability using the Percentage of Agreement with a score of 95%, which is included in the 'highly reliable' criteria. The validity results obtained by subject matter experts were a score of 0.96, which is included in the "valid" criteria, and a reliability of 98%, which is included in the 'highly reliable' criteria.

The combing section was implemented for 66 grade XII beauty and spa students at SMK Negeri 1 Salatiga. The implementation stage involved administering pre-tests and post-tests on hair colouring skills, which were assessed using performance tests. The following are the *pre-test* and *post-test* results:

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pre test exsperiment	33	62	83	73.06	5.974
Pre test control	33	60	84	72.52	6.104
Post test exsperimen	33	79	96	88.64	4.114
Post test control	33	60	84	73.64	6.309
Valid n (listwise)	33				

Evaluation will be conducted to determine the effectiveness of the comb section teaching aid by identifying differences in student skills after using the comb section product in the control and experimental classes, as well as to determine the practicality of the comb section. The normality test in this study used the Shapiro-Wilk. The normality test results showed that the pre-test value for the experimental class was 0.109, the post-test value was 0.391, the pre-test value for the control class was 0.445, and the post-test value was 0.085. These data showed a significance value greater than 0.05, so it can be concluded that the data were normal. The results of the homogeneity of variance test using the Levene Test obtained a significance value based on the mean of 0.065, based on the median of 0.090, based on the median and with adjusted df of 0.090, and based on the trimmed mean of 0.067. The data shows that all Sig. Values are > 0.05, so it can be concluded that the students' learning outcomes have homogeneous variance between groups.

UThe N-Gain test aims to compare students' learning outcomes in the form of hair colouring practices in the control and experimental classes, whether there is an improvement or not. Based on the analysis of the N-Gain percentage scores, the mean N-Gain for the experimental class was 58.47%, which is >56, thus falling within the criteria for sufficient effectiveness. In comparison, the N-Gain for the control class was 4.14%, which is <40, thus falling within the criteria for ineffective. The N-Gain test results indicate that using section combs effectively improves student learning outcomes.

The independent sample T-test aims to determine whether the difference in means between the experimental and control classes is significant. Levene's Test for Equality of Variances results show an F value of 3.271 with a significance (Sig.) of 0.075. Since the significance value is greater than 0.05, it can be concluded that the variances of the two groups are homogeneous, so the analysis continues with the assumption of variance. From these results, the data used is assumed to have equal variances. The t-test results show a value of t = 24.787 with a significance value (Sig. 2-tailed) of 0.000 < 0.05. This means there is a significant difference between the average N-Gain of the experimental and control classes.

AAnalysis of the practicality of the comb section teaching aid using percentage distribution (PD). The data analysis results obtained a score of 1262 and a maximum score of 1485, with a percentage distribution result of 84. The percentage distribution (PD) data obtained were adjusted to the assessment criteria, namely, if 80<PD≤100, it was classified as very good. The results of the percentage distribution analysis can be concluded to be in the 'very good' category because it is >80.

Discussion

The comb section was developed using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The initial stage involved conducting an analysis, during which it was found that students had difficulty colouring hair, thus necessitating the use of teaching aids to facilitate their learning. According to Kaltsum,(2017) "The benefits of using teaching aids in learning are that they focus students' attention, make students more enthusiastic and excited to learn, facilitate mastery of the material, stimulate students thinking and reasoning, and enhance their imagination and creativity." Next, the researcher created a comb section design to divide hair precisely according to the desired size.

After designing the product, the next step is development in the form of product creation. At this stage, product feasibility is also validated by material and media experts to ensure that the

developed product meets the needs of students. Once the product has been declared feasible, the next step is to implement the product with Year 12 Beauty and Spa students at SMK Negeri 1 Salatiga. After implementation, the next step is evaluation. The evaluation aims to determine the effectiveness of the section comb teaching aid and the response of section comb users. Developing the section comb teaching aid aims to make it easier for students to section hair during hair colouring practice. This is in line with Annisah's opinion inGusti Made Surya Adi Candra et al., (2022) who stated that Teaching aids can be defined as concrete devices that are deliberately designed, made, and arranged to help instil and understand concepts or principles in learning".

The feasibility test of the section comb as a hair colouring teaching aid was conducted by five media experts, practitioners in the beauty field, and five material experts, consisting of three productive beauty teachers and two beauty lecturers. The results of the feasibility test analysis showed that the section comb teaching aid was declared 'highly feasible'. The assessment by media experts covered three aspects, namely the form of the teaching aid, the quality of the teaching aid, and the function of the teaching aid. Based on the analysis of the responses from five media experts, the average feasibility score for the form of the teaching aid was 3.74, the quality of the teaching aid was 3.70, and the function of the teaching aid was 3.67. The average score for these three aspects was 3.69, which falls into the very feasible category. This aligns with the opinion of Kiptiyah, et al. (2022) The requirements for good teaching aids are: simple in form and durable, can be made from easily obtainable materials, and facilitate teaching and clarify concepts, not the other way around. In this case, the section comb is designed with a simple shape, uses strong materials, and clarifies the concept of hair sectioning.

The assessment of material suitability covers two aspects: material relevance and learning. Based on the assessment results by five material experts, the material relevance aspect received an average score of 3.96, and the learning aspect received a score of 3.6. The average score for these two aspects was 3.78, indicating that the media was considered "highly

suitable". Gusti Made Surya Adi Candra et al., (2022) stated, "Teaching aids are designed to help instil and understand concepts or principles in learning". Thus, the section comb teaching aid is very feasible to be used to divide hair in the subject of hair colouring.

Testing the effectiveness of the comb section teaching aid using N-Gain and Independent Sample T-Test. The effectiveness of the comb section teaching aid was determined from performance tests conducted through pre-tests and post-tests in the control and experimental classes. The analysis of the N-Gain percentage values shows that the mean N-Gain of the experimental class is 58.47%, which is >56, so it is classified as quite effective. In comparison, the N-Gain of the control class is 4.14%, which is <40, so it is classified as ineffective. The experimental class showed that using teaching aids in the form of section combs was classified as sufficiently effective in improving student learning outcomes in hair colouring practice. Meanwhile, in the control class, using conventional combs was ineffective in improving student learning outcomes. This is in line with Prosser's theory (Suhaedin et al., 2023) which states that vocational education will achieve its effectiveness if the training experiences that shape work habits and correct mindsets are repeated until they are in line with future job requirements.

The results of the independent sample T-test show a significant difference between the average N-Gain of the experimental class and the control class. This can be seen from the t-value of 24.787 with a significance value (Sig. 2-tailed) of 0.000 < 0.05. Thus, the treatment using section combs in hair colouring lessons given to the experimental class significantly improved the students' ability to colour hair compared to the control class. This is in line withNurrita (2018) who states that learning media can assist the teaching and learning process so that the message's meaning becomes clearer. The educational or learning objectives can be achieved effectively and efficiently. According to Kaltsum,(2017) "The benefits of using teaching aids in learning are that they focus the attention of students, make students more enthusiastic and excited to learn, facilitate mastery of the material,

stimulate students' thinking and reasoning, and increase students' imagination and creativity."

The practicality test determines whether the developed product is easy to use and meets user needs. Practicality test data was obtained from users of the section comb, namely all students in the experimental class. The analysis of the practicality data of the comb section teaching aid used the percentage distribution (PD). The analysis of the practicality data of the comb section teaching aid obtained a score of 84, which is >80 and falls within the 'very good' criteria. It can be concluded that the comb section teaching aid is helpful for students as a tool for dividing hair in hair colouring lessons. According toKiptiyah, et al. (2020) the requirements for a good teaching aid are that it is easy to store and use.

CONCLUSION

Based on research on the development of section combs as teaching aids for hair sectioning techniques in hair colouring lessons, it can be concluded that the development of section combs as teaching aids for hair sectioning techniques was carried out using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The results of developing section combs as teaching aids for hair sectioning techniques in hair colouring lessons are considered very feasible. Section combs as teaching aids for hair sectioning techniques in hair colouring lessons are considered quite effective in improving student learning outcomes. Developing section combs has proven practical as a hair sectioning aid in hair colouring lessons.

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