



Development of Discovery Learning-Based Booklets as Learning Media for Human Digestive System Material

Qiara Nur Halifa¹, Nurul Fauziah*

¹Riau Islamic University, Pekanbaru, Indonesia

*Email: fauziahnurul@edu.uir.ac.id

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Abstract

Science learning plays an essential role in helping students develop a comprehensive understanding of natural phenomena and biological processes. However, observations and interviews with teachers and students revealed that the classroom learning process often relied on lecture-based and textbook-centered methods, which tended to make students less enthusiastic and less active during lessons. Therefore, this study aimed to develop a discovery learning-based booklet as a learning medium for the human digestive system material. This research is a development study that employed the Plomp development model. Data collection instruments included teacher and student interview sheets, observation sheets, needs analysis questionnaires, self evaluation forms, validation sheets, and practicality test questionnaires through one-to-one evaluations, small group trials, and field testing. The results of expert validation showed that the developed booklet met the criteria for validity in terms of content, design, and learning feasibility. Furthermore, the practicality test results demonstrated that the booklet was easy to use, engaging, and well received by both teachers and students. In conclusion, the discovery learning-based booklet on the human digestive system is feasible and practical to be used as a learning medium in junior high school science classes.

Keywords: biology education; booklet; discovery learning; digestive system material; science learning media

INTRODUCTION

Education is a planned activity designed to foster deep understanding and high quality learning, thereby developing students' potential. The educational process involves systematic interactions between educators, students, and learning resources in various formal and non formal environments. The primary goal is to develop individuals who are knowledgeable, devout, and have noble character, ready to contribute socially and professionally. Education is also seen as an instrument for personal development integrated with the moral and social values of society (Eliana *et al.*, 2022; Rahman *et al.*, 2022). Improving the quality of education in Indonesia is realized through the implementation of the Merdeka Curriculum. Through this approach, it is hoped that a generation will be created that is intelligent, has character, and is able to face future challenges with a critical and creative attitude.

The Merdeka Curriculum is a curriculum model designed as an educational revolution in Indonesia. This curriculum provides greater flexibility for schools, teachers, and students in determining the materials, learning methods, and assessment forms that best suit their individual needs and potential (Zakso, 2022; Hasdaway, 2025; Meisuri *et al.*, 2025) This curriculum is designed to develop students' technical and social skills while building strong character. This system emerged in response to global change, adopting a more relevant and inclusive approach that takes into account cultural diversity and local conditions in Indonesia. While it provides schools with greater creativity and ownership over the learning process, challenges related to human resource readiness, facilities, and disparities in education quality between regions must be addressed to ensure the curriculum's objectives are optimally achieved

(Abidin *et al.*, 2022; Nugraha, 2022; Putri & Arsanti, 2022). The Merdeka Curriculum will be more effective if implemented in conjunction with learning media.

Learning media encompasses all forms of tools or resources used to convey information, stimulate students' thinking, attention, and interest in learning, thus making the learning experience more effective and meaningful (Oktavia *et al.*, 2021; Anggraini *et al.*, 2024). These media serve as instruments that help present learning materials more clearly and systematically, enabling students to understand them more easily. Furthermore, learning media plays a crucial role in supporting the teaching and learning process, ensuring the efficient and effective achievement of educational goals (Nurrita, 2018; Nurfitri *et al.*, 2022). The right learning media can increase student engagement and create a more interactive learning atmosphere. By utilizing a variety of media, the learning process becomes more interesting, less monotonous, and better suited to each student's learning style (Honesty *et al.*, 2019; Harahap, 2023; Nisa *et al.*, 2024). One example of practical and easy to understand learning media is a booklet.

A booklet is a concise, book like teaching aid that presents thematic material in a concise and well organized manner. A booklet is described as a small, book shaped learning medium with concise, clear, and easy to understand content, typically ranging from five to forty eight pages. Booklets serve as practical and effective supplementary teaching materials because they are portable, visually appealing, and help convey information concisely and focused to students, thereby improving their understanding of learning concepts (Gultom *et al.*, 2022; Fuadiyah & Wijayanti, 2024). In addition, the use of booklets can enhance learning independence, as students can study the material on their own both inside and outside the classroom (Dewi *et al.*, 2021; Eliana *et al.*, 2022; Anggraini *et al.*, 2024). The use of booklets can increase the effectiveness of learning using the discovery learning model.

The discovery learning model is a learning approach in which students actively seek knowledge through exploration, investigation, and reflection, while the teacher acts as a facilitator guiding the discovery process (Wardhany & Muhid, 2024; Putra *et al.*, 2025). The steps in discovery learning, as outlined in Jerome Bruner's book, include identifying problems, formulating hypotheses, designing and conducting experiments, drawing conclusions, and reflecting. Students undergo an exploration process that strengthens the knowledge they acquire (Marisyah & Sukma, 2020; Wardhany & Muhid, 2024; Putra *et al.*, 2025). Based on interviews and observations conducted by researchers with teachers and students, it was revealed that classroom activities were uneven, dominated by high achieving students, and many students were reluctant to express their opinions during the learning process. Furthermore, the learning media used were limited to charts and printed textbooks, making the learning process less engaging for students. As many as 83.5% of students indicated the need for discovery learning-based booklets for junior high school level. This need arises because the science topic of the human digestive system is considered difficult, and students' achievement in this topic was below the school's minimum mastery criteria, with an average score of 59.73%. Based on this background, this study aimed to develop a discovery learning-based booklet as a learning medium for the human digestive system material.

METHOD

The development of this learning media was based on the Plomp model. This model was chosen because it provides clear, structured, and systematic procedures that effectively guide the research and development process, aligning with the development process carried out by the researcher (Plomp & Nieveen, 2013). The Plomp development model consists of three stages. However, in this study, only two stages of the Plomp model were implemented, namely the preliminary research phase and the prototyping phase. The stages of developing the discovery learning-based booklet media include the preliminary research phase, which consists of curriculum analysis, interviews with science teachers, and analysis of student problems and needs. The prototyping phase consists of self-evaluation, expert review, one-to-one evaluation, small group discussion, and field testing.

The population in this study consisted of eighth grade students from a junior high school. The sample was randomly selected from the population using a cluster sampling technique. The sampling process was carried out by drawing lots to select one class from each school. The population and sample

in this study included eighth grade students who had previously studied the human digestive system, ensuring that they possessed relevant prior knowledge to evaluate the developed learning material. This prior understanding helped enhance the accuracy and reliability of their responses regarding the suitability and practicality of the booklet. Furthermore, selecting students with similar educational backgrounds ensured consistency in evaluating the effectiveness of the developed media. The sample size and distribution of participants are presented in Table 1 below.

Table 1. Research population

No	School	Sample
1	Siak Hulu 1 Junior High School	32
2	Siak Hulu 4 Junior High School	40
	Total	72

The validation sheets in this study consisted of several items designed to assess the quality, feasibility, and appropriateness of the developed learning media. The validation process was carried out by expert validators, including a subject matter expert, a media expert, and two experienced science teachers. Each validator provided assessments based on specific aspects, including content feasibility, media design, language clarity, and alignment with students' characteristics. In addition, the results of the expert validation were used as the basis for revising and refining the booklet before it was tested with students. Thus, the validation process played an essential role in ensuring that the developed learning media was not only visually appealing but also scientifically accurate and effective for use in learning activities. The aspects and indicators used in the expert validation sheet were systematically developed to assess the feasibility, relevance, and overall quality of the learning media. These components include content accuracy, presentation, language clarity, and visual design. The detailed criteria for expert validation are presented in Table 2.

Table 2. Expert validation grid sheet

No	Aspect	Indicator
1.	Content suitability	Sequence Depth/complexity of material Appropriateness
2.	Discovery learning-based booklet	The booklet is in line with the characteristics of Discovery Learning

(Saputri, 2023)

Furthermore, the material expert validation sheet specifically focuses on evaluating the accuracy, depth, and alignment of the content with learning objectives and curriculum standards. The detailed grid of the material expert validation sheet can be seen in Table 3.

Table 3. Material expert validation sheet grid

No	Aspect	Indicator
1.	Display layout	Appearance Clarity of learning objectives Alignment of learning objectives with CP Alignment of material with learning objectives Systematics and logical flow
2.	Language	Language
3.	Readability	Ease of reading Ease of understanding
4.	Discovery Learning-based booklet	The booklet is in line with the characteristics of Discovery Learning

The formula for testing the validity level of developing discovery learning-based booklet media on human digestive system material for eighth grade junior high school/MTS students is scored as follows:

$$Vma = \frac{Tse}{Tsh} \times 100\%$$

$$Vmo = \frac{Tse}{Tsh} \times 100\%$$

$$Vp = \frac{Tse}{Tsh} \times 100\%$$

$$Vs = \frac{Tse}{Tsh} \times 100\%$$

The practicality test aims to determine how feasible and easy the discovery based learning booklet is to use in the learning process. This aspect focuses on how well students and teachers can apply the booklet in classroom activities, including ease of use, clarity of instructions, time efficiency, attractiveness of the design, and suitability for the learning objectives. The practicality percentage is calculated using the following formula:

$$P = \frac{F}{N} \times 100$$

The explanation of the formula is as follows: P represents the practicality percentage, F is the total score obtained from the practicality questionnaire, and N is the maximum possible score. The resulting percentage is then converted into practicality categories such as very practical, practical, quite practical, less practical, or impractical, based on the predetermined interval ranges. The higher the percentage value, the more practical the booklet is considered to be in supporting learning activities. Through this analysis, it can be determined whether the discovery based learning booklet on the human digestive system is practical and can be effectively implemented for eighth grade students in junior high schools.

RESULT AND DISCUSSION

A curriculum analysis was conducted to examine the applicable curriculum. Based on the results of interviews conducted, both schools use the independent curriculum. The development of discovery learning-based booklet learning media was carried out by analyzing the curriculum used in schools, namely, the independent curriculum. This became the basis for analyzing the suitability of indicators with learning objectives in teaching modules created by teachers. The analysis results show that the human digestive system material was covered in two sessions, each lasting 40 minutes. The learning outcomes, learning objectives, and learning objective indicators for the human digestive system material are presented in Table 4 below.

Table 4. Material expert validation sheet grid

Learning Outcomes
By the end of Phase D, students will be able to describe atoms and compounds as the smallest units of matter and cells as the smallest units of living organisms, identify the organizational systems of life, and conduct analyses to identify the relationships between organ systems and their functions, as well as abnormalities or disorders that may arise in specific organ systems (digestive system, circulatory system, respiratory system, and reproductive system).
Learning Objectives
1. Explain the nutrients contained in food.
2. List the additives commonly used in food
3. Analyze the digestive process in the digestive system and the disorders that may occur in daily life.

The results of interviews conducted by two teachers at each of the two schools revealed that students still faced difficulties in the biology learning process, as teachers continued to rely on lecture methods, which led to students being less enthusiastic about participating in classroom learning activities. The media used by teachers in the biology learning process in the classroom were textbooks, PowerPoint presentations, and charts, and teachers still rarely use varied learning media. The results of the analysis of problems and needs of students in the science learning process show that teachers still tend to use lecture methods, teachers still tend to use teacher's textbooks, and teachers still do not make full use of learning media, causing students to be less active in the science learning process and activities in the classroom to be unevenly distributed, dominated by smart students, with many students still unwilling to express their opinions during the learning process. This is evidenced by the fact that 59.73% of daily test scores are below the learning objective achievement criteria at the school. The researcher also asked students to fill out a questionnaire on their needs regarding learning media that support the material on the human digestive system. The results of the student needs questionnaire, completed by 72 students from two schools: 32 students from Siak Hulu 1 Junior High School and 40 students from Siak Hulu 4 Junior High School showed that 83.5% of students responded that they needed learning media in the form of booklets based on the discovery learning approach.

Self-evaluation shows that the process of developing discovery learning-based booklet media at this stage is evaluated through self-evaluation, namely by revising the designed media. Researchers read and examine each prototype, make improvements to those that are not suitable, and add the necessary parts. The results of the self-evaluation indicate that the design of the teaching material prototype is complete in terms of its structure, specifically in the form of a discovery learning-based booklet. After conducting a self-evaluation of the shortcomings in the discovery learning-based booklet media, the steps of discovery learning were included in each learning activity. The self-evaluation shows that the development of the media is complete in each learning activity, stating that evaluation aims to review and refine various aspects and functionalities of learning media to align with expected standards (Cahyaningtyas *et al.*, 2023; Anggraini *et al.*, 2024; Bakari *et al.*, 2025). After the self-evaluation stage is completed, an expert review or validity test will be conducted.

The validation results obtained from media experts, subject matter experts, and learning experts are used as a basis for consideration in revising or improving the quality of the developed learning media. If the developed learning media meet the criteria with a validity level considered highly valid, then the discovery learning-based booklet media on the human digestive system for junior high school are valid for use in the learning process. The validation process is carried out separately by each validator. One media expert validator, one subject matter expert validator, and three learning expert validators. The average percentage of validation results for the discovery learning-based booklet on the human digestive system for junior high school, as determined by the five validators, is presented in the following Table 5.

Table 5. Average percentage of booklet media by expert validators

No.	Validator	Average (%)	Category
1	Media Expert	87.50	Very Valid
2	Content Expert	93.75	Very Valid
3	Learning Expert	95.6	Very Valid

Appearance aspects include five indicators: cover design, text readability, appeal, image clarity, and interactivity. On the media expert validation sheet, there are two additional indicators: booklet standards based on the discovery learning approach. The validator rates the visual aspects with an average percentage of 87.5%, categorized as highly valid for text readability, booklet standards, appeal, image clarity, and booklet syntax based on discovery learning. The booklet media still requires revisions to the cover to add logos at the top of the cover, specifically the logos of the University of Islam Riau and Tut Wuri Handayani, change the font for better visibility, align the concept map more evenly, provide sources for the images, and use appropriate colors to ensure the text is clearly visible. In line with the research findings Rantung *et al.* (2023), the visual aspect refers to the assessment of the visual quality of educational media, encompassing aesthetics, neatness, and ease of use. This aligns with the comments and suggestions from the expert media validator, who recommended adding the Tut Wuri Handayani logo, changing the font to make the image clearer, improving the concept map, replacing the image in the syntax with one appropriate for the students, and adjusting the text colors for better visibility. The researchers have revised the suggestions and input from the expert material validators. Hanifah *et al.* (2020) states that an informative booklet with an attractive design can arouse curiosity, enabling students to easily understand what is being conveyed in the learning process.

Content validity aspects include three indicators: sequence, depth/complexity of material, and relevance of material, plus an additional indicator: the syntax of the discovery learning-based booklet. The average overall percentage of expert material validation was 93.75% highly valid for the sequence, relevance of material, and syntax of the discovery learning-based booklet indicators. The discovery learning-based booklet media still require revision or improvement in the depth/complexity of the material indicator. This aligns with the comments and suggestions from the expert material validators, who recommended adding information from journals and including barcodes on the pages to provide students with more information. Given these shortcomings, the researcher has already revised the suggestions and feedback provided by the expert material validators. The researcher has revised the suggestions and feedback from the expert material validators. That teaching media is a tool or material that contains lesson material and is systematically arranged to achieve learning objectives (Harahap *et al.*, 2020; Amini *et al.*, 2024; Anggraini *et al.*, 2024).

The layout of the discovery learning-based booklet media was assessed by learning experts as being suitable in terms of material, clarity of learning objectives, and learning outcomes. The material was presented systematically, with a clear and logical flow that was interesting for students. The appropriate use of media also helps learners become more active and creative, making the learning process more effective and efficient. That learning media also serve to motivate learners, present information, and achieve learning objectives (Sapriyah, 2019; Dewi *et al.*, 2021; Jauza & Albina, 2025). For teachers, learning media can assist in designing systematic learning and improving the quality of teaching. From a linguistic perspective, the booklet is highly suitable for use. Based on the percentage obtained from learning experts, the font type and size are easy to read and understand, and the language used is communicative. The assessment indicates that the booklet based discovery learning media on the human digestive system effectively addresses the linguistic aspects. Indicating that the appropriate use of media also helps students become more active and creative, thereby making the learning process more effective and efficient (Wahidah *et al.*, 2022; Jauza & Albina, 2025).

The booklet is easy to read and understand, allowing students to grasp the material more clearly. The booklet is presented in an attractive form that reflects the characteristics of a textbook, is easy to read and use, and has good physical quality, which reveals that the booklet consists of that are appealing and

the concepts are presented based on learning problems found in the students' surroundings, thereby encouraging students' curiosity and attracting their attention to be active and enthusiastic in learning, as well as helping students understand the learning material verbally and visually based on concrete things that students often encounter (Nomleni *et al.*, 2022; Jauza & Albina, 2025). The results of the one-to-one evaluation show that the development of a discovery learning-based booklet on the human digestive system has an attractive appearance and can motivate students to learn. The complete results of the one-to-one evaluation trial, obtained through interview sheets, can be seen in Table 6.

Table 6. Results of one-to-one evaluation trials on students

No.	Aspects	Average (%)	Category
1	Appearance	88.63	Very Practical
2	Readability	87	Very Practical
3	Language	89	Very Practical
4	Content	89	Very Practical
5	Presentation	89.25	Very Practical
	Average	88.71	Very Practical

The one-to-one evaluation test obtained an average percentage of 88.71% with a very practical category. The appearance aspect of the developed booklet is attractive for use in learning. Informative booklets with attractive designs can arouse curiosity, enabling students to easily understand the content conveyed during the learning process. The readability aspect suggests that the font type and size are easy to read, which can help increase students' interest in learning (Fitriansyah *et al.*, 2018; Maisyura *et al.*, 2021; Sarip *et al.*, 2022). The language used in the booklet is expected to be appropriate for the readers, easy to understand, and use terms that are readily comprehensible to students. Students can read and understand the material more clearly (Fajrin *et al.*, 2021; Novianti & Syamsurizal, 2021; Jauza & Albina, 2025). Physically, it is presented in an attractive format that reflects the characteristics of a textbook, including ease of reading and use, as well as the physical quality of the book.

The linguistic aspects of the developed booklet employ clear, communicative, and easy to understand language. This aligns with research findings suggesting that, in linguistic aspects, key considerations include punctuation, diction, and sentence structure. Punctuation is used to create meaning, clarity, and emphasis in sentences (Kariska & Anindyarini, 2019; Harahap *et al.*, 2020; Hidayatullah *et al.*, 2022). The material aspect, as presented in the indicators of sequence and presentation, is arranged logically, systematically, and understandably, with a clear flow and in accordance with students' needs. The material aspect is considered an assessment of the quality of content presented in learning media, including the accuracy of concepts, relevance of material to the curriculum, depth of material, connection to real life, logical and engaging presentation, and the inclusion of evaluations to measure student understanding (Fitra & Maksum, 2021; Simbolon *et al.*, 2021; Anggraini *et al.*, 2024). The presentation aspect of the developed booklet motivates learners, making them interested in learning and actively engaged in the learning process, and it already incorporates elements of discovery learning. The presentation aspect can also be assessed in terms of how effectively the learning media conveys the material visually and interactively, including the clarity of information organization and the appropriateness of communication methods (Simbolon *et al.*, 2021; Sulistiyawati *et al.*, 2023; Anggraini *et al.*, 2024). The results of the small group trial, in terms of practicality, are presented in Table 7.

Table 7. Results of the small group trial on students

No.	Aspects	Average (%)	Category
1	Appearance	89.75	Very Practical
2	Readability	89.5	Very Practical
3	Language	87.25	Very Practical
4	Content	89	Very Practical
5	Presentation	89.13	Very Practical
	Average	89.97	Very Practical

The visual design of the developed booklet successfully captures students' interest in learning. The font style and size are readable, and the language used is clear and comprehensible. Overall, the booklet's presentation is straightforward, easy to follow, and engaging for students. The images in the booklet are appropriate and help students understand the material. This finding is consistent with research showing that visual design plays a vital role in attracting students' attention and supporting material comprehension (Fitra & Maksum, 2021; Simbolon *et al.*, 2021; Rantung *et al.*, 2023). Based on the evaluation results by media experts of the visual aspects, it was found that the interactive learning media developed have an attractive design, appropriate placement of elements, and an appropriate use of colors. The linguistic aspects use clear, communicative, easy to understand language. The linguistic aspect of the practical booklet can be assessed based on how easily students understand the content, supported by straightforward sentence structure and the use of uncomplicated words. Additionally, the alignment of language style with students' cognitive development level is a crucial factor, where the use of communicative and contextual language enhances understanding and learning interest in the booklet's content. The readability aspect refers to the type and size of font used, which should be easy to read and can increase students' interest in learning. The readability of the booklet is also evident in the use of clear fonts, proportional font sizes, and a neat layout, making it easier for students to understand the content. The readability aspect refers to how easily students can understand the text content in learning media, considering factors such as language, sentence length, font size, paragraph structure, and layout (Fadhila *et al.*, 2021; Maisyura *et al.*, 2021; Sarip *et al.*, 2022).

The presentation aspect of the developed booklet motivates students, sparks their interest in learning, and encourages active participation in the learning process, while also incorporating elements of discovery learning. Discovery learning-based learning media have a presentation that is not only informative but also structured according to the stages of scientific thinking. By aligning the booklet content with discovery learning syntax, students are not only reading but are also actively encouraged to discover concepts on their own, making this media effective and engaging in both independent and group learning processes (Sumarlina *et al.*, 2019; Aprijal *et al.*, 2020; Fajrin *et al.*, 2021). The sequential presentation of the material in the booklet makes it easier for students to follow the learning process, enabling them to understand each part of the material gradually and comprehensively. The material in the booklet is also systematically organized, starting from basic concepts to more complex topics, allowing students to build their understanding gradually and purposefully. The material is presented in a sequential manner with an easy to understand flow and is tailored to the learners' abilities, making the learning process more effective. The presentation aspect of the developed booklet motivates learners, making them interested in learning and actively engaged in the learning process, and it already incorporates the principles of discovery learning. Discovery learning-based learning media have a presentation that is not only informative but also structured according to the stages of scientific thinking. By aligning the booklet's contents with the discovery learning syntax, students are not only reading but are also invited to actively discover concepts themselves, making this media effective and interesting in both independent and group learning processes (Sumarlina *et al.*, 2019; Oktavia *et al.*, 2021; Partono *et al.*, 2021). The field test was carried out with students from one eighth grade class. This stage of testing the developed learning media took place after the small group trial. The results obtained from the field test are presented in Table 8.

Table 8. Field test results on students

No.	Aspects	Average (%)	Category
1	Appearance	89.95	Very Practical
2	Readability	90.82	Very Practical
3	Language	89.57	Very Practical
4	Content	90.06	Very Practical
5	Presentation	91.31	Very Practical
	Average	90.40	Very Practical

The appearance of the developed booklet is attractive for use in learning. The booklet design effectively attracts students' interest in learning, as the text type and size are easy to read, and the writing used is clear and easy to understand. The presentation of the booklet is clear, concise, and engaging, effectively capturing students' attention. This is supported by findings showing that an informative cover design, neat column layout, comfortable color choices, and relevant supporting illustrations contribute to creating an engaging, user-friendly, and effective learning tool in junior high school classrooms (Hidayati *et al.*, 2024; Wahyuni *et al.*, 2022). The aim is for the media not only to contain knowledge but also to capture attention, be comfortable to read, and effectively facilitate learning. The readability aspect was assessed as having a good level of readability. It was found that the text in the booklet was clear and the font size was appropriate. Additionally, the material was organized with a neat layout and not too densely packed, preventing readers from becoming quickly fatigued. This makes it easier for students to understand the booklet's content and prevents them from feeling bored while reading. This suggests that the font type and size are easy to read, which can enhance students' interest in learning. This is further supported by research showing that a booklet for immune system material was designed to be easy to read, using simple language, short sentences, a comfortable font size and layout, and text combined with simple illustrations (Yusuf, 2017; Fitriansyah *et al.*, 2018; Octiana *et al.*, 2020).

The linguistic aspects of the booklet are considered good, as the language used is clear and easy to understand. Sentences are structured concisely and clearly, so students have no difficulty understanding the content. This aligns with research that evaluates the linguistic aspect in terms of the appropriateness and clarity of the language used, including sentence structure, word choice, spelling consistency, and suitability for the students' level (Hanifah *et al.*, 2020; Harahap *et al.*, 2020; Laoli *et al.*, 2024). The language used in this medium must be clear, consistent, and effective in facilitating students' understanding of the linguistic aspects of the text. The content aspect of the booklet is considered very practical. The material presented is appropriate for learning needs and easy to understand. This is consistent with the idea that the content aspect of the booklet refers to the appropriateness of the material to the curriculum, scientific accuracy, presentation structure, and relevance to students' learning need (Hanifah *et al.*, 2020; Pramana *et al.*, 2020; Nazilah *et al.*, 2024). The presentation aspect of the booklet is considered good and easy to follow. The material is arranged in a logical sequence from start to finish, so students do not get confused when studying it. Each section is given a clear title, and the discussion is concise, making it easy to understand. This finding aligns with research stating that the presentation aspect describes how the material in the booklet is organized and presented visually and structurally to make it easy to understand and appealing for students to use (Aprijal *et al.*, 2020; Irianti & Mahrudin, 2021; Novianti & Syamsurizal, 2021). The high practicality level (90.40%) indicates that the discovery learning-based booklet positively impacts students' motivation, engagement, and independent learning. Its clear language, accurate content, and systematic presentation contribute to improved conceptual understanding, reduced misconceptions, and more effective achievement of learning objectives.

CONCLUSION

Based on the research results, the discovery based learning booklet on the human digestive system was found to be highly valid and very practical for use in educational settings. These findings indicate that the discovery based learning booklet is highly feasible to be used as an innovative learning medium that effectively helps students understand the concept of the human digestive system in a more active, independent, and meaningful way. The implementation of this media also supports teachers in facilitating student centered learning, allowing for more interactive classroom activities and encouraging students to take greater responsibility for their own learning. Globally, the development of such educational media contributes to improving the quality of science education through discovery based approaches, fostering 21st century skills such as critical thinking and problem solving, and enhancing students' scientific literacy at the international level. Moreover, the use of technology based instructional materials like this booklet promotes digital literacy and prepares students to participate more effectively in an increasingly digital and knowledge based world.

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