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Development of QR Code-Based Booklet to Prevent Inhalant Abuse of Elementary School Students in Palopo City

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Abstract. This research is motivated by the many cases of narcotics abuse in Indonesia which have now been found in various regions including the city of Palopo. This study aims to educate the public from an early age about the dangers of narcotics and hazardous substances such as inhalant abuse as a preventive measure for the development of narcotics cases in Indonesia, especially in Palopo City. This research uses the R&D method by developing a QR Code-based booklet as educational media for elementary school students and teachers. The results of this study found that the QR Code-based booklet product to prevent inhalant abuse behavior in elementary school students was declared valid or feasible to use. Furthermore, the teacher's response in the practicality test of the QR Code-based booklet to prevent inhalant abuse behavior was declared practical to use. In this study, it was also found that there was an increase in learning outcomes before and after the application of QR Code-based booklets to prevent inhalant abuse behavior.

Keywords: Booklet, Elementary School, Inhalant Abuse, QR Code, Student

1. Introduction

Data from the United Nations Office on Drugs and Crime (UNODC) states that 275 million people in the world used drugs in 2016 (Consortium, 2018), while in Indonesia BNN states that in 2021 the total number of drug abusers is 3.66 million. Inmates of narcotics cases recorded in Palopo City Prison are 455 prisoners out of 723 prisoners in total, which means that 63% of prisoners in prison are narcotics prisoners. Prevention of Narcotics P4GN is an Indonesian government program that is currently intensively socialized. If you enter the words "elementary school children and narcotics" on Google, you will get news about narcotics cases spearheaded by elementary school children. These cases include in 2022 found elementary school students addicted to methamphetamine, in 2020 found users and dealers of narcotics are 5th-grade elementary school children. News like this that is freely shown on channels that are easily accessible to children is not impossible to follow.

From the news, it can be concluded that the spread of narcotics is currently shifting to elementary school children, aged 6-12 years. Information obtained during the FGD in Class II A prison on April 19, 2022, found that when the staff conducted counseling, one of the prisoners said that at first he knew narcotics when he was in elementary school, initially tried '*ngelem*' then later became addicted and wanted a higher effect so that in the end he used narcotics. Wang (2018) said that drug abuse by young people starts with inhalant abuse because the character of inhalants is legal to obtain but has similar effects to narcotics (Wang & Hoyte, 2018). These products are legal, cheap, and easy to obtain as they are widespread (Crossin et al., 2019). These products are thinner, wall and wood sealers, floor cleaners, permanent spill glue, etc (Saini et al., 2022).

Research data by Helen (2020) states that 43 adolescents and school children aged 8-17 years are abusers of '*aibon*' glue-type inhalants in Sungaiselan Village, Bangka Belitung (Helen et al., 2020). The results of Helen's research also mention the need for social control both preventively and repressively against inhalant abuse, as mandated in Law Number 35 of 2014 which states that children who are victims of narcotics, alcohol, psychotropic, and other addictive substances abuse are children who need special protection so that the community should play

an active role in carrying out its function in carrying out social control. Research conducted by Crossin (2019) shows that the impact of inhalant abuse on children is associated with poor growth, impaired bone growth, and brain development, causing permanent ignorance (Crossin et al., 2019). The results of research conducted by Sedana stated that the government should continue to conduct counseling about the dangers of inhalant addictive substances when consumed and the impact of inhalant addictive substances when used continuously and make a new regulation specifically regulating the abuse of the use of addictive substances to be more assertive in eradicating a deviation because there is no regulation governing the abuse of inhalants (Sedana et al., 2021).

1.1. Problem Statement

Following the launch of the UKS Revitalization program in 2022, the Minister of Education and Research invites all stakeholders to promote the health of school residents. This is in accordance with Indonesian Law Number 36 of 2009 concerning health. Health promotion in schools is a strategic step in improving children's health. One of the efforts in health education promotion is through booklets. The booklet is an innovation in learning in the form of printed media (Wild et al., 2019). This means Socialization with booklets is more effective in increasing the knowledge of elementary school children. This research is also important to do because the abuse of inhalant-addictive substance abuse does not have special rules but the Criminal Code and the Act have been regulated regarding the impact and risks when abusing minors, then to tackle the abuse of inhalant-addictive substances can use non-criminal law policy efforts (Non Penal) and criminal law policy (Penal) (Sedana et al., 2021b). So that this research is an effort that can be done within the scope of education to prevent early on to elementary school students to avoid the abuse of inhalant-addictive substances.

1.2. Related Research

Research conducted by Sopyan Azhari Assi Diki, Bagus, and Dhuan (2022). Development of Contextual Based Booklet Teaching Materials on Energy Source Material for Grade IV Elementary School Students. The research method uses Research and Development with the development model, namely ADDIE. From the results of his research, it was found that the booklet teaching book was effective for use during the learning process (Diki et al., 2022). The products developed are the same, namely booklet teaching materials with research methods using RnD, while the differences in this study are the theme of the booklet and the development of QR Code-based booklets using 4D so that e-booklets with audio explanations will be obtained.

Research conducted by Nanda Helen (2020). Community Social Control of Children Abusing Inhalan in Central Bangka Regency. This research is quantitative research with samples over 18 years old. The results of his research state that there needs to be policy and program interventions directed at increasing the capacity of the local community to prevent and overcome the problem of abuse (Helen, 2020). This research is a quantitative study that discusses social control of inhalant abusers over the age of 18 and the results obtained that community capacity building is needed to overcome this. Meanwhile, this research is a follow-up to the research by producing a product that can be used as a product for the prevention of inhalant abuse with the target of elementary school students, and as a basis for early prevention.

Research conducted by Dita Patresia (2022). Development of Learning Media for Mathematics Textbooks Assisted by QR-Code Technology in Grade 4 Elementary School. This research uses the 4D model development. with a sample of grade 4 elementary schools totaling 10 students. The results showed that the development of mathematics textbook media assisted by QR Code Technology was successful and feasible to use as media in the learning process (Patresia et al., 2022).

The equation of this research with previous research is both using QR Code as development in textbooks with 4D development mode. The difference is that this study also uses QR Code and 4D and the resulting QR Code is in the form of an e-booklet with audio explanations so that it can be better understood by elementary school students.

1.3. Research Objectives

This research is important as an effort to prevent narcotics from an early age by introducing inhalant abuse by providing information about legal but abusable products. The narcotics theme is in line with the priority theme stated in ARKAN, namely social welfare in society, which focuses on drug prevention. This research is also an effort to support the government's P4GN program. Based on the problems in the background, the problems formulated in this research are:

1. How is the needs analysis of the QrCode-based booklet for the prevention of Inhalant Abuse of elementary school students in Palopo City?
2. How is the booklet development process carried out for the prevention of Inhalant Abuse of elementary school students in Palopo City?
3. Does the QR Code-based booklet on the prevention of Inhalant Abuse in elementary school students meet the criteria of valid, practical, and effective?
4. Is there an increase in elementary school students' understanding of inhalant abuse after and before the QR Code-based booklet on Inhalant Abuse prevention for elementary school students in Palopo City?

2. Theoretical Framework

Based on the design of this study, there are four relevant concepts or theories, namely Inhalant abuse, QR Code, Booklet, and 4D development model. The following is the discussion.

2.1. Inhalant Abuse

Inhalant abuse is the intentional inhalation of volatile substances with the aim of achieving a desired mental state. Inhalants are various volatile pharmacological substances (Real et al., 2021). Inhalant substance abuse is categorized by groups of substances that have a specific central nervous system action or perceived psychoactive effect and have the same route of narcotic use. Inhalants are classified into 3 groups based on pharmacology: group I includes volatile solvents, fuels, and anesthetics; group II includes nitrous oxide and group III includes volatile alkyl nitrites (Crossin et al., 2023). What distinguishes narcotics and inhalants is their volatility, although there are narcotic substances that are also used by inhalation but are not volatile at room temperature, for example, cocaine, heroin, nicotine, and alcohol, their distinctive pharmacological properties distinguish these substances from inhalants. Inhalant abusers use volatile products capable of producing a rapid and generally pleasurable sensory experience, or "high", with rapid dissipation and minimal "hangover" symptoms. Inhaled substances are widely available, convenient, cheap, easy to conceal, and legal for certain purposes, but are deliberately abused by abusers (Hunter, 2021).

Mechanisms of Inhalant Substance Abuse Inhalants are abused through a variety of methods, and many "street" terms such as (glue) sniffing, snorting, huffing, gliding, and dusting. Product vapors are usually inhaled through the mouth (huffing) or nose (sniffing or snorting) from the original container. Abusers may also inhale vapors from chemically saturated cloths applied to the face or inhaled by mouth. Some aerosols are sprayed directly into the mouth or nose, and volatile solvents may be applied to the nasal mucosa or nearby surfaces such as fingernails or shirt collars, or cuffs and then inhaled. "Glading" refers to inhaling air freshener aerosols. Familiar and innocuous containers are often used to help conceal inhalant abuse (e.g., inhaling spray paint fumes from soft drink cans or nitrous oxide-filled balloons). Paper or plastic bags containing inhalants can be placed over the mouth and nose (bagging) (Radparvar, 2023).

2.2. Health Education

Health education is a process of changing healthy living behavior based on self-awareness in individuals, groups or communities to maintain and improve health. The process of changing student behavior at school, one of which is obtained from the learning process in physical education, sports and health (Quennerstedt, 2019). Health education for children is an obligation that must be given as stipulated in Law Number 36 of 2009 Article 131 which contains efforts to maintain children's health carried out since the child is still in the womb being born,

after birth, and until the age of 18 (eighteen) years which is a shared responsibility for parents, families, communities and governments and local governments. Article 136 paragraph 1 explains that every school-age child and adolescent has the right to information and education as well as health services and has the right to receive health education through schools and madrasah and outside of school to improve children's ability to live in a healthy environment so that they can learn, grow and develop harmoniously and optimally become quality human resources (Undang-Undang Republik Indonesia Nomor 36 Tahun 2009 Tentang Kesehatan, 2009).

2.3. Booklet

A booklet is a minimalist book that has a minimum of five pages and a maximum of forty pages but does not include the title page. The use of booklets is very suitable for delivering information to increase understanding of the material or subject matter because it is colorful (Purnomo & Rahayuningsih, 2020).

2.4. QR Code

QR Code or Quick Response Code is a 2-dimensional barcode that can store data used for educational or commercial purposes that practice learning media so that it is easy to access (Chou & Wang, 2020). QR Code system consists of a QR encoder and decoder. Encoders are responsible for encoding data and generating QR codes while decoders translate QR Code data (Beloualid et al., 2023).

2.5. The 4D Development Model

This research is the result of a combination of various products, namely print technology, audiovisual technology, and computer-based technology or integrated technology. So it requires a development model that follows the objectives of this study. One of the development designs used for the development of various products is the 4D (four D) development model. The 4D Development Model consists of 4 main stages, namely define, design, develop, and disseminate (Irawan et al., 2018).

3. Method

3.1. Research Design

The method used in this research is the research and development or R&D (Research and Development) approach. The R&D method is a research method used to produce certain products and test the impact of these products (Gustiani, 2019). This research design uses the 4D (four D) development model which consists of four stages, namely: define, design, develop, and disseminate.

3.1.1. Define

Activities at this stage are carried out to establish and define development requirements. In general, in this definition, activities are carried out to analyze development needs, product development requirements that follow user needs, and research and development models that are suitable for developing products.

3.1.2. Design

After getting problems from the defining stage, the design stage is then carried out. This design stage aims to design a media booklet that can be used as a guide.

3.1.3. Develop

The development carried out is the making of booklets using QR codes to obtain booklets and e-booklets accompanied by audio explanations. This stage also prepared questionnaires for expert assessment and trials. Develop stage is a development stage consisting of an assessment from expert validators that aims to produce booklet products. The booklet has been revised based on comments, suggestions, and assessments from expert validators.

3.1.4. Disseminate

Disseminate is the last stage of the 4D method, namely the dissemination of learning media products that have been developed. The main purpose of this stage is to disseminate research products so that they can be utilized by those in need.

3.2. Participants

The respondents were primary school teachers and students in Palopo City who were selected using a purposive sampling technique. Palopo City school data is based on the Dapodikdasamen data center (Basic Education Data Directorate General of Early Childhood Education, Basic Education and Secondary Education). The number of primary schools in Palopo City in 2023 is 81 primary schools (65 public) and 16 (private) spread across 9 sub-districts in Palopo City. In this study, researchers took 2 sub-districts, namely East Wara Sub-district, namely the Selekoe Region because it is included in the category of alert areas in the 2021 Indonesian Drugs Report. Researchers chose SD Negeri 06 Bogar Palopo because it is located in that area. As well as the Bara sub-district by looking at statistical data on the owner of the largest number of primary school children based on the Basic Data on Basic and Secondary Education (Dapodikdasmen), namely SD Negeri 50 Bulu Datu. The research sample included teachers who had a linear educational background with their current job and grade 6 students aged 11-12 years in each of the selected schools.

3.3. Data Collection

Data is divided into two parts, namely: quantitative data obtained in the form of scores on validation questionnaires and trials, then qualitative data in the form of direct responses from validators on validation questionnaires and trials. Research instruments in the form of questionnaires and test sheets, questionnaires used in collecting data are questionnaires for experts/validators and practicality trial subjects, test sheets are used in collecting data on student learning outcomes to measure product effectiveness.

3.4. Data Analysis

Data collection techniques used questionnaires for validity, tests for learning outcomes, and documentation. The data analysis technique for the validity questionnaire of material experts, linguists, and media experts is calculated using a Likert scale with a range of 1) Strongly disagree, 2) Disagree, 3) Undecided, 4) Agree and 5) Strongly Agree and for students calculated using a Guttman scale in the form of a firm YES-NO answer.

The data analysis technique used to process data from the results of expert reviews and development trials on booklet product development is to use descriptive statistical analysis, namely quantitative data obtained from questionnaires in the form of scores which will be processed using formulas and categorized based on predetermined criteria. Then qualitative descriptive analysis is qualitative data obtained from a questionnaire in the form of correction suggestions from validators and users will be used to revise booklet products to make them better and meet valid, practical, and effective criteria.

3.5. Validity and Reliability

Quantitative data obtained from a questionnaire for validity testing in the form of scores that will be processed using the formula:

$$P=(\sum x/SMI\ ) *100\%$$

Description:

P = Percentage

$\sum x$ = Total score

SMI = Ideal Maximum Score

Furthermore, to calculate the overall percentage of the subject, the formula is used:

$$P= F/N$$

Description:

P= Percentage

F = Total percentage of the whole subject

N = Many Subjects

The categorization used in this study follows the conversion of achievement levels with a scale of 5, namely:

Table 1. Conversion of Achievement Levels Scale 5

Level of Achievement	Qualification	Description
90%-100%	Very Good/Very Valid/Very Practical	No Need to Revise
75%-89%	Good/Valid/Practical	Revised as necessary
65%-74%	Moderately	Quite Much Revised
55%-64%	Less	Much revised
0%-54%	Very Poorly	Revised total

For the category of understanding of inhalant abuse using this measurement method:

1. Highest score : 15x1 = 15
2. Lowest score : 15x 0 = 0
3. Score Interval : (15-0)/2 = 7,5

Inhalant Abuse Knowledge Criteria

1. Low knowledge : score 0-7
2. High knowledge : score 8-15

While the product trial data on students to measure the increase in understanding of concepts related to understanding by comparing pre-test and posttest. How to assess the results of these students with the assessment sheet used after and before using the media. Furthermore, measuring the increase in concept understanding with N-gain (Tegeh, 2014) as follows:

$$g = \frac{\text{Skor } Posttest - Skor\ Pretest}{Skor\ Maksimal - Skor\ Pretest}$$

Description:

G = gain

Posttest Score = final class average score

Pretest Score = average value of the initial class

The basis for decision-making with the assessment criteria is as follows (Tegeh, 2014).

Tabel 2. Criteria for Improving Concept Understanding

coefficient interval	criteria
N-gain<0,3	Low
0,3 </*N-gain* < 0,7	Medium
N-gain>/ 0,7	High

4. Findings

This chapter describes the process and results of booklet development that refers to the 4D development model, namely: 1) Define, 2) Design, 3) Develop, and 4) Disseminate. The results obtained in each development phase will be described below.

4.1. Define

At the initial stage of booklet development, namely define, at this stage, the researcher conducted a needs analysis by distributing questionnaires in February-March 2023, 20 respondents filled out the questionnaire consisting of several schools in Palopo and Luwu City with various lengths of work.

Tabel 3. Characteristics of Respondents in the Needs Analysis

No.	Teacher's Initials	Gender	School name	Length of service
1.	A	Male	Sd Celebes Islamic School Luwu	2 Years
2.	B	Female	SDN 11 Dangerakko Palopo	20 Years
3.	C	Male	SDN 5 Salamae	4 Years
4.	D	Male	SDN 17 Benteng Palopo	2 Years
5.	E	Female	SDN 25 Sabbamparu Kota Palopo	20 Years
6.	F	Male	SDN 34 Bara Kota Palopo	4 Years
7.	G	Female	SDN 25 Sabbamparu	17 Years
8.	H	Female	SDN 1 Lalebbata (Palopo)	23 Years
9.	I	Female	SDN 34 Bara Palopo	15 Years
10.	J	Female	SDN 46 Buntu Batu Palopo	19 Years
11.	K	Female	SDN 43 Takkalala Kota Palopo	19 Years
12.	L	Female	Sdit Dai Palopo	2 Years
13.	M	Male	SDN 28 Mancani (Kota Palopo/ Telluwanua	4 Years
14.	O	Female	Palopo	13 Years
15.	P	Female	SDN 19 Mappesau Kota Palopo	19 Years
16.	Q	Male	SDIT Insan Madani Palopo	11 Years
17.	R	Female	SDN 62 Pamenta Kota Palopo	2 Years
18.	S	Male	SDN 7 Ponjalae Kota Palopo	30 Years
19.	T	Male	SD Negeri 28 Mancani Palopo	12 Years
20.	U	Female	SDN 64 To'bulung Kota Palopo	4 Years

Source: Primary Data Year 2023

Tabel 4. Percentage of Respondents' Answers Related to Booklet Needs

No.	Question	Answer			
		Yes	%	No	%
1	Is there a specific reference taught about drugs in primary schools?	3	15%	17	85%

2	Are there references to inhalant abuse in elementary school students as a step towards recognizing inhalant abuse?	4	20%	16	80%
3	Have you ever seen a child who was sniffing drugs?	8	40%	12	60%
4	Do you feel helped in teaching the material to students by utilizing the media (such as the use of ebooks/ppt/video/audio explanations)?	20	100%	0	0
5	Is additional media needed in teaching materials so that students are motivated to learn independently? (such as the use of ebooks/ppt/video/audio explanations)	20	100%	0	0

Source: Primary Data Years 2023

From the results of the questionnaire given to respondents, the researcher concluded that inhalant abuse guidelines are needed for the prevention of drugs from an early age.

4.2. Design

At this stage, a media design is produced. This stage aims to produce a media design that will be developed. The steps are as follows:

4.2.1. Selecting the Most Suitable Topic

The formulation of subtopics in this activity is carried out through literature studies from various sources by taking the last five years of studies and keywords, namely inhalant abuse on Google Scholar.

4.2.2. The Initial Design (Draft of the Booklet)

The results of the initial design in this phase include the design of the media, namely the booklet using the Canva application tool with Arial fonts, attractive images, and coverage of the contents of the booklet.

4.2.3. Discussions with Resource Persons

Researchers consulted with parties who were considered capable of providing information related to inhalant abuse, namely resource persons from the Palopo City BNN (National Narcotics Agency) and one of the Palopo City Regional Government doctors.

Table 5. Source

No.	Source	Position
1	dr. Nurhasanah, S.Ked	Palopo City Local Government Doctor
2.	St. Aisyah Husain	Rehabilitation Sub-coordinator of BNN Palopo City

From the discussion with the resource persons, input was obtained regarding the accuracy of the content of the material, clarity of terms, and presentation of the material.

4.2.4. Second Draft of Booklet

The results of the initial design in this phase include the design of the media used to obtain data in the development process. In this phase, the researchers made revisions from the input of expert sources related to the first draft booklet. For this second design, the researcher used the help of the Coreldraw application for layout, after completing the researcher recorded the audio and made an ebook accompanied by audio using a web-based application, Heyzine. Then create an ebook barcode and add the barcode back to the second sheet of the booklet.

Figure 1. Ebook Barcode

4.3. Develop

This stage is to produce the final form of learning media through revisions based on input from experts and trial data. The steps taken at this stage are:

4.3.1. Validation Stage

At this stage, the validity test was carried out by 4 experts, namely 2 users/teachers: Mrs. Nurtina, M.Ag (SDN Bogar teacher) and Mrs. Rambaloe, M.Pd.I (SDN Bulu Datu teacher), then the material expert, Mrs. Sukmawaty, M.Pd, and the media expert Mrs. Nurfakhrunnisa, M.Pd.

Tabel 6. User Validation

No.	Statement	User 1 (Teacher of SDN Bulu Datu)	User 2 (Teacher SDN Bogar)
1	The accuracy of the content of the material with the competencies to be achieved	4	5
2	Clarity of material on inhalant substances	5	5
3	Clarity of terms used in the booklet	4	5
4	Completeness of material in the booklet according to the needs of elementary school students	5	5
5	The Presentation of material in the booklet makes it easier for teachers to teach inhalant abuse	5	5
6	The presentation of material in the booklet makes it easier for students to understand inhalant abuse material	5	5
7	The accuracy of the presentation of the material can make students listen well	4	4
8	The suitability between research objectives and material exposure	4	5
9	The suitability of the picture with the material	4	5
10	The accuracy of using audio explanations helps students understand the material	4	4
Total		44	48

Source: Primary Data Year 2023

Based on the assessment results from the user validation test in the table, the validity level of the booklet is obtained as follows

P = 44+48/100 x 100% = 92%

User assessment with a result of 92% is in a very valid category with a statement that it does not need to be revised. The revisions made were to change the size of the booklet to A4 and change the cover to hardcover.

Tabel 7. Media Expert Validation Results

No	Question	Score
1	The accuracy of the illustrations used in the cover	4
2	The suitability of the material and media used	5
3	The quality of the images used	5
4	Accuracy of image size	5
5	Accuracy of image placement	5
6	Text quality	5
7	Sound quality	5
Total		34

Based on the assessment results from the user validation test in the table, the validity level of the booklet is obtained as follows

P = 34/35 x 100% = 97%

User assessment with a result of 97% is in a very valid category with a statement that it does not need to be revised.

So the validity test of QR Code-based booklet products to prevent inhalant abuse of elementary school students in Palopo City, obtained

Percentage = 92% + 85% + 97% / 3 = 91%

Obtained a percentage of 91% with a valid category so that the booklet is suitable for use as a guide for teachers.

4.3.2. Product Trial Stage

Tabel 8. Teacher Response

No	Repondent Code	School Name	Question										Total Score
			1	2	3	4	5	6	7	8	9	10	
1	AK	SDN 06 Bogar	5	5	4	5	4	5	4	4	5	5	46
2	SM	SDN 06 Bogar	4	4	4	5	4	4	4	5	4	5	43
3	RD	SDN 06 Bogar	4	4	4	5	4	4	4	5	4	5	43
4	EL	SDN 06 Bogar	4	4	4	5	4	5	5	4	4	5	44
5	SS	SDN 06 Bogar	4	5	5	4	5	5	4	4	4	5	45
6	H	SDN 06 Bogar	4	5	5	5	4	5	4	4	5	4	45
7	AW	SDN 06 Bogar	4	4	5	4	5	4	5	5	5	5	46
8	SA	SDN 06 Bogar	4	5	4	5	4	5	4	4	4	3	42
9	P	SDN 06 Bogar	4	5	4	5	4	5	3	3	4	3	40
10	IM	SDN 06 Bogar	4	5	4	5	4	5	3	3	4	3	40
11	ST	SDN 06 Bogar	4	5	5	4	5	5	5	4	5	5	47
12	H	SDN 06 Bogar	4	5	4	5	5	5	4	5	5	5	47
13	AA	SDN 06 Bogar	5	5	5	4	5	5	4	5	5	5	48
14	NT	SDN 06 Bogar	4	5	5	4	5	4	4	4	4	5	44

15	YS	SDN Buludatu	5	4	4	4	4	4	4	4	4	4	41
16	RM	SDN Buludatu	5	4	4	4	4	4	4	4	4	4	41
17	MS	SDN Buludatu	4	5	4	4	4	5	5	4	5	5	45
18	A	SDN Buludatu	4	4	4	5	5	4	4	5	5	5	45
19	ES	SDN Buludatu	4	4	4	5	5	4	4	5	5	5	45
20	CY	SDN Buludatu	4	4	4	5	4	4	4	5	5	5	44
21	AB	SDN Buludatu	4	4	5	4	4	4	4	4	5	5	43
22	H	SDN Buludatu	4	4	4	4	4	4	4	4	4	4	40
23	TS	SDN Buludatu	4	4	4	4	4	5	4	5	5	5	44
24	H	SDN Buludatu	4	4	4	4	4	5	4	5	5	5	44
25	M	SDN Buludatu	4	3	4	3	5	4	4	4	5	5	41
26	NS	SDN Buludatu	4	3	3	4	4	3	4	3	4	3	35
27	KU	SDN Buludatu	4	4	3	4	4	3	4	3	4	3	36
28	IR	SDN Buludatu	4	5	4	4	4	4	3	4	4	5	41
29	MS	SDN Buludatu	5	4	4	4	4	4	4	4	4	4	41
30	RL	SDN Buludatu	5	4	5	5	4	4	4	4	4	4	43
Total													1289

Based on the results of the assessment of the teacher's response, the level of practicality of the booklet is obtained as follows P = 1289/1500 x 100% = 86%

The results of the teacher's responses in the table above concluded that the total teacher response of 86% was in the practical category. Thus in the practicality trial, the booklet product is practical to use.

4.3.3. Product Effectiveness Testing Stage

The booklet that has been developed meets the valid and practical criteria so that it is continued to test the effectiveness of the product through a student knowledge test before and after being presented with the contents of the booklet to 70 respondents. Students' knowledge before being presented with the booklet through a pretest while students' knowledge after listening to the booklet presentation was obtained through posttest. The knowledge test consisted of 15 questions with Yes and No options with the same questions as the pretest and posttest. These two tests were used to determine the effectiveness of the booklet. The pretest results are presented in the following table.

Tabel 9. Student Pretest Results

			Pretest															
No	Student code	School	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total Score
1	1	SDN BOGAR	0	0	1	1	1	1	1	1	1	0	0	0	0	0	1	8
2	2	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	4
3	3	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	4
4	4	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	4
5	5	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
6	6	SDN BOGAR	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
7	7	SDN BOGAR	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2
8	8	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
9	9	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3

10	10	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	4
11	11	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
12	12	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
13	13	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
14	14	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
15	15	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
16	16	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
17	17	SDN BOGAR	0	0	1	1	1	1	1	1	1	0	1	1	0	0	1	10
18	18	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
19	19	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
20	20	SDN BOGAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	21	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	4
22	22	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
23	23	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
24	24	SDN BOGAR	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	4
25	25	SDN BOGAR	0	0	0	1	0	1	1	0	0	0	0	0	1	0	0	4
26	26	SDN BOGAR	0	0	0	1	0	1	1	0	0	0	0	0	1	0	1	5
27	27	SDN BOGAR	0	0	1	1	1	1	1	1	0	0	1	1	0	1	1	10
28	28	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
29	29	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
30	30	SDN BOGAR	0	0	0	0	0	1	1	1	0	0	0	1	1	0	0	5
31	1	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
32	2	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
33	3	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	1	5
34	4	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	4
35	5	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
36	6	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	1	5
37	7	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
38	8	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	4
39	9	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	4
40	10	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	4
41	11	SDN BULU DATU	0	0	0	1	1	1	0	0	0	0	0	0	1	0	1	5
42	12	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
43	13	SDN BULU DATU	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	3
44	14	SDN BULU DATU	0	0	0	1	1	1	1	1	1	1	0	0	0	0	1	8
45	15	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	1	5
46	16	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	1	1	6
47	17	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	1	1	6
48	18	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	1	1	6
49	19	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	1	5
50	20	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	1	5
51	21	SDN BULU DATU	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	3
52	22	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	1	5
53	23	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	1	5

54	24	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
55	25	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
56	26	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
57	27	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
58	28	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
59	29	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
60	30	SDN BULU DATU	0	0	0	0	0	1	1	1	1	0	0	0	1	1	1	7
61	31	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	4
62	32	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	5
63	33	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	1	1	6
64	34	SDN BULU DATU	0	0	0	0	1	0	0	0	1	0	0	1	1	0	0	4
65	35	SDN BULU DATU	0	0	0	0	0	1	1	1	0	1	0	0	1	0	1	6
66	36	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
67	37	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	1	5
68	38	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
69	39	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	4
70	40	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3

Tabel 10. Pretest category

Inhalant Category	Frequency	Percentage
Low inhalant abuse knowledge	66	94 %
High inhalant abuse knowledge	4	6 %
Total	70	100 %

The table above shows that the level of understanding of students at the time of the pretest regarding inhalant abuse, namely 66 respondents (94%) was still low and 4 respondents (6%) were already in the high category.

Tabel 11. Student Posttest Siswa

			Post Test															
No	Student Code	School	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total Score
1	1	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	14
2	2	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
3	3	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
4	4	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
5	5	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
6	6	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
7	7	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
8	8	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
9	9	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
10	10	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
11	11	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15

12	12	SDN BOGAR	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	12
13	13	SDN BOGAR	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	12
14	14	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
15	15	SDN BOGAR	1	1	0	0	1	1	1	1	1	0	0	1	1	0	1	10
16	16	SDN BOGAR	1	1	1	1	0	1	1	1	1	1	1	1	0	0	1	12
17	17	SDN BOGAR	0	1	0	1	1	1	1	1	1	0	1	0	0	0	0	13
18	18	SDN BOGAR	0	1	0	1	1	1	1	1	1	1	0	1	0	0	0	9
19	19	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	12
20	20	SDN BOGAR	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	13
21	21	SDN BOGAR	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	13
22	22	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
23	23	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
24	24	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
25	25	SDN BOGAR	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	13
26	26	SDN BOGAR	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	13
27	27	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
28	28	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
29	29	SDN BOGAR	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	11
30	30	SDN BOGAR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
31	1	SDN BULU DATU	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
32	2	SDN BULU DATU	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	12
33	3	SDN BULU DATU	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
34	4	SDN BULU DATU	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
35	5	SDN BULU DATU	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
36	6	SDN BULU DATU	1	1	1	1	0	1	1	1	1	1	0	1	1	0	1	12
37	7	SDN BULU DATU	1	1	0	1	0	1	1	1	0	1	0	0	1	0	1	9
38	8	SDN BULU DATU	1	1	0	1	1	1	1	1	1	0	1	1	1	0	1	12
39	9	SDN BULU DATU	0	0	0	1	1	1	1	0	0	0	1	1	1	0	1	8
40	10	SDN BULU DATU	0	0	0	0	0	1	1	1	0	0	0	0	1	0	1	5
41	11	SDN BULU DATU	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	13
42	12	SDN BULU DATU	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	13
43	13	SDN BULU DATU	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
44	14	SDN BULU DATU	1	0	0	1	0	1	1	1	1	1	1	0	1	0	1	10
45	15	SDN BULU DATU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15

46	16	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
47	17	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
48	18	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
49	19	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
50	20	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
51	21	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
52	22	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
53	23	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
54	24	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
55	25	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
56	26	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
57	27	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
58	28	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
59	29	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	14
60	30	SDN DATU	BULU	1	0	1	1	0	1	1	1	1	0	0	0	1	1	0	9
61	31	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
62	32	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
63	33	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
64	34	SDN DATU	BULU	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	14
65	35	SDN DATU	BULU	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	13
66	36	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
67	37	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
68	38	SDN DATU	BULU	1	1	1	0	1	1	1	1	1	1	0	1	1	0	1	12
69	39	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	13
70	40	SDN DATU	BULU	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	13

Tabel 12. Posttest category

Inhalant category	Frequency	Percentage
Low inhalant abuse knowledge	1	1 %
High inhalant abuse knowledge	69	99 %
Total	70	100 %

Source: Primary Data in 2023

The table above shows that the level of student understanding at the time of the explanation related to inhalant abuse using the booklet, namely 69 respondents (99%) were in the high category and 1 respondent (1%) was in the low category.

4.3.4. Pretest and Posttest Improvement Test Stage

This test was carried out to find out the improvement of students' abilities with pretest and posttest questionnaires on the booklet media provided. The test results of the average increase in pretest and posttest are presented in the table as follows:

$$g = \frac{\text{Skor } Posttest - Skor\ Pretest}{Skor\ Maksimal - Skor\ Pretest}$$

Description:
G = gain
Posttest Score = final class average score
Pretest Score = average value of the initial class

Tabel 13. Average improvement test (N-Gain)

No	Student code	School Name	Pretest score	Posttest score	Average	Nominal criteria	Desc
1	1	SDN BOGAR	8	14	11	0,85714286	High
2	2	SDN BOGAR	4	15	9,5	1	High
3	3	SDN BOGAR	4	14	9	0,90909091	High
4	4	SDN BOGAR	4	14	9	0,90909091	High
5	5	SDN BOGAR	3	15	9	1	High
6	6	SDN BOGAR	2	15	8,5	1	High
7	7	SDN BOGAR	2	15	8,5	1	High
8	8	SDN BOGAR	3	15	9	1	High
9	9	SDN BOGAR	3	15	9	1	High
10	10	SDN BOGAR	4	15	9,5	1	High
11	11	SDN BOGAR	3	15	9	1	High
12	12	SDN BOGAR	3	12	7,5	0,75	High
13	13	SDN BOGAR	3	12	7,5	0,75	High
14	14	SDN BOGAR	3	14	8,5	0,91666667	High
15	15	SDN BOGAR	3	10	6,5	0,58333333	Medium
16	16	SDN BOGAR	3	12	7,5	0,75	High
17	17	SDN BOGAR	10	13	11,5	0,6	Medium
18	18	SDN BOGAR	3	9	6	0,5	Medium
19	19	SDN BOGAR	3	12	7,5	0,75	High

20	20	SDN BOGAR	0	13	6,5	0,86666667	High
21	21	SDN BOGAR	4	13	8,5	0,81818182	High
22	22	SDN BOGAR	3	15	9	1	High
23	23	SDN BOGAR	3	15	9	1	High
24	24	SDN BOGAR	4	15	9,5	1	High
25	25	SDN BOGAR	4	13	8,5	0,81818182	High
26	26	SDN BOGAR	5	13	9	0,8	High
27	27	SDN BOGAR	10	15	12,5	1	High
28	28	SDN BOGAR	3	15	9	1	High
29	29	SDN BOGAR	3	11	7	0,66666667	Medium
30	30	SDN BOGAR	5	15	10	1	High
31	1	SDN BULU DATU	3	14	8,5	0,91666667	High
32	2	SDN BULU DATU	3	12	7,5	0,75	High
33	3	SDN BULU DATU	5	14	9,5	0,9	High
34	4	SDN BULU DATU	4	14	9	0,90909091	High
35	5	SDN BULU DATU	3	14	8,5	0,91666667	High
36	6	SDN BULU DATU	5	12	8,5	0,7	High
37	7	SDN BULU DATU	3	9	6	0,5	Medium
38	8	SDN BULU DATU	4	12	8	0,72727273	High
39	9	SDN BULU DATU	4	8	6	0,36363636	Medium
40	10	SDN BULU DATU	4	5	4,5	0,09090909	Rendah
41	11	SDN BULU DATU	5	13	9	0,8	High
42	12	SDN BULU DATU	3	13	8	0,83333333	High
43	13	SDN BULU DATU	3	14	8,5	0,91666667	High
44	14	SDN BULU DATU	8	10	9	0,28571429	rendah
45	15	SDN BULU DATU	5	15	10	1	High
46	16	SDN BULU DATU	6	15	10,5	1	High
47	17	SDN BULU DATU	6	15	10,5	1	High
48	18	SDN BULU DATU	6	15	10,5	1	High
49	19	SDN BULU DATU	5	15	10	1	High
50	20	SDN BULU DATU	5	15	10	1	High
51	21	SDN BULU DATU	3	15	9	1	High
52	22	SDN BULU DATU	5	15	10	1	High
53	23	SDN BULU DATU	5	15	10	1	High
54	24	SDN BULU DATU	3	15	9	1	High
55	25	SDN BULU DATU	3	15	9	1	High
56	26	SDN BULU DATU	3	14	8,5	0,91666667	High
57	27	SDN BULU DATU	3	14	8,5	0,91666667	High
58	28	SDN BULU DATU	3	14	8,5	0,91666667	High
59	29	SDN BULU DATU	3	14	8,5	0,91666667	High
60	30	SDN BULU DATU	7	9	8	0,25	rendah
61	31	SDN BULU DATU	4	15	9,5	1	High
62	32	SDN BULU DATU	5	15	10	1	High
63	33	SDN BULU DATU	6	15	10,5	1	High
64	34	SDN BULU DATU	4	14	9	0,90909091	High
65	35	SDN BULU DATU	6	13	9,5	0,77777778	High
66	36	SDN BULU DATU	3	15	9	1	High
67	37	SDN BULU DATU	5	15	10	1	High

68	38	SDN BULU DATU	3	12	7,5	0,75	High
69	39	SDN BULU DATU	4	13	8,5	0,81818182	High
70	40	SDN BULU DATU	3	13	8	0,83333333	High

Source: Primary Data Year 2023

Tabel 14. Distribution Criteria

No	Increase In Understanding	Low		Medium		High	
1		N	%	N	%	N	%
		3	4	6	8	61	88

Source: Primary Data Year 2023

The results of the pre-test and post-test assessments of students obtained a dominant high criteria assessment, namely 88% of students experienced an increase in understanding related to the prevention of inhalant abuse through a QR Code-based booklet.

4.4. Disseminate

The last stage in this development research is the dissemination stage. Researchers limitedly distributed booklets to two schools, namely SDN 50 Bulu Datu and SDN 06 Bogar Palopo City.

5. Discussion

5.1. Validity of QR Code-Based Booklet Development to Prevent Inhalant Abuse in Primary School Students

The QR Code-based booklet on the prevention of Inhalant abuse developed meets the valid criteria, meaning that the booklet is suitable for use as a prevention guide. The feasibility of the booklet in terms of content/material can be seen from the accuracy of the content of the material with the competencies to be achieved, the clarity of the material, the clarity of the terms used in the booklet, the completeness of the material according to the needs of students, the presentation of the material makes it easier for teachers and students, the suitability of the images with the material and the accuracy of the use of audio explanations that can help students understand the material.

The feasibility of the booklet in terms of media can be seen from the accuracy of the illustrations used in the cover, the suitability between the material and the media used, the quality of the images used, the accuracy of the image size and placement, and the quality of the text and sound quality. The feasibility of the booklet in terms of design can be seen from the accuracy of the size of the booklet used following the characteristics of elementary schools, the quality of the cover, the attractiveness of the cover design, the standardization of the language/words used, the completeness of the information conveyed by the language/sentences, the ease of teachers and students in understanding the language used, the suitability of the layout design, the image setting in the booklet and the suitability of the selection of letters and text colors. The results of this study are in line with research conducted by Sopyan etc. which states that booklet teaching books are effectively used during the learning process (Azhari et al., 2022). Research conducted by Dita (2022) which uses QR Code assistance in elementary school learning, the results of his research show that the development of mathematics textbook media assisted by QR Code Technology is successful and feasible to use as media in the learning process (Patresia et al., 2022).

5.2. Teachers' Response to the QR Code-Based Booklet Product in Preventing Inhalant Abuse in Elementary School Students

The teacher's response is obtained from the practical test, the booklet produced is in the practical category by looking at several aspects, namely the booklet media can improve children's ability to achieve predetermined goals, the booklet media is sufficient in developing

children's abilities, the booklet media is adequate in developing children's development, the content of the material is appropriate to improve children's understanding, the learning media used can attract children's attention, helps teachers in delivering material, the accuracy of the image with the characteristics of elementary school children, the accuracy of the size of the image in the booklet, the accuracy of the language used, the images used are interesting. This is in line with previous research, namely the Development of Booklet Learning Media on the Material of Surrounding Objects to Increase the Activeness and Learning Outcomes of 3rd Grade Students of SDN Wonorejo 02 Blitar Regency, which states that learning through booklets is practical to use (Azizah et al., 2022).

5.3. Improved Learning Outcomes through the Application of QR Code-Based Booklet Products on the Prevention of Inhalant Abuse for Students

Booklet products using QR Code on the prevention of inhalant abuse for students are effectively used in prevention because of the difference in understanding from the pretest and posttest conducted before and after the application of the booklet on learning to prevent inhalant abuse, this is in line with a study conducted by Nadalina (2023) who conducted a QR Code-based booklet development on social studies learning this media improves elementary school student learning (Nadalina et al., 2023).

6. Conclusion

Based on the results of research and discussion of this development, it can be concluded that the QR Code-based booklet product to prevent inhalant abuse behavior in elementary school students is declared valid or feasible to use. Furthermore, the teacher's response in the practicality test of the QR Code-based booklet to prevent inhalant abuse behavior was declared practical to use. In this study, it was also found that there was an increase in learning outcomes before and after the application of QR Code-based booklets to prevent inhalant abuse behavior. The results of developing a QR Code-based booklet to prevent inhalant abuse in elementary school students have great implications for preventing deviant behavior such as inhalant abuse.

Limitation

The media developed in this research is only designed according to the learning needs of elementary school students. So it is not yet feasible to be applied to higher education levels or to children who are not yet school-age.

Recommendation

After developing a QR Code-based booklet to prevent inhalant abuse behavior, the researcher wrote recommendations in supporting further research as follows:

1. For schools and teachers, it is necessary to update learning media continuously to keep it up to date so that the media provided follows the conditions of students. Continuously so that it continues to be up to date so that the media provided is under the conditions of the students.
2. For students, with the QR Code-based booklet learning media for the prevention of inhalant abuse, it is hoped that students can always be introspective and it is hoped that students' desire to learn independently will continue to increase to improve learning outcomes, and can increase students' knowledge of preventing narcotics early on.
3. For researchers, researchers hope that further research can add new variations and a wider scope, which can be booklets in the form of animation so that students/children can understand the dangers of abuse of inhalant substances so that children or students can take early prevention so that they do not fall into narcotics.

Conflict of Interest

The Authors declare that there is no conflict of interest.

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