



# Telegram Chatbot-Based Interactive Media in Fourth Grade Elementary School Indonesian Language Subjects

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## ABSTRAK

Kurangnya penggunaan media menyebabkan siswa bersikap pasif yang berdampak terhadap minat belajar rendah sehingga hasil belajar siswa kurang memuaskan. Tujuan penelitian ini yaitu mengembangkan Media Interaktif Berbasis Chatbot Telegram pada Mata Pelajaran Bahasa Indonesia untuk siswa kelas IV sekolah dasar. Jenis penelitian ini yaitu pengembangan memakai model Sugiyono sampai delapan tahapan. Subyek riset ini yaitu guru kelas IV, 1 ahli materi, 1 ahli media, 6 murid uji coba awal, dan 14 murid uji coba pemakaian. Metode yang digunakan untuk mengumpulkan data yaitu observasi, wawancara, kuesioner dan tes. Instrumen pengumpulan data yang dipakai yakni pedoman observasi, lembar wawancara, dan soal tes. Teknik analisis data menggunakan deskriptif kualitatif, analisa deskriptif kuantitatif, analisa N-Gain, serta analisa statistik inferensial (uji-t). Hasil penelitian yaitu hasil penilaian ahli materi sebesar 92,3% (sangat layak). Hasil penilaian ahli media 90,8% (sangat layak). Hasil persentase tanggapan guru 95% (sangat layak). Hasil persentase tanggapan siswa 94,15% masuk ke dalam kategori sangat layak. Hasil uji N-Gain 0,6949 masuk ke dalam kriteria sedang. Hasil uji-t diperoleh perbedaan hasil belajar murid yang signifikan setelah mengikuti pembelajaran memanfaatkan media interaktif berbasis Chatbot Telegram. Disimpulkan media interaktif berbasis Chatbot Telegram layak serta efektif dipakai dalam mata pelajaran Bahasa Indonesia. Implikasi penelitian yaitu Media Interaktif Berbasis Chatbot Telegram dapat digunakan dalam pembelajaran Bahasa Indonesia.

## ABSTRACT

Lack of media use causes students to be passive, resulting in low interest in learning and making student learning outcomes less than satisfactory. This research aims to develop Telegram Chatbot-Based Interactive Media in Indonesian Language Subjects for fourth-grade elementary school students. This type of research is developed using the Sugiyono model in eight stages. The subjects of this research were a fourth-grade teacher, 1 material expert, 1 media expert, 6 initial trial students, and 14 usage trial students. The methods used to collect data are observation, interviews, questionnaires, and tests. The data collection instruments were observation guidelines, interview sheets, and test questions. Data analysis techniques used qualitative descriptive analysis, quantitative descriptive analysis, N-Gain analysis, and inferential statistical analysis (t-test). The research results were the material expert assessment results of 92.3% (very feasible). The results of the media expert assessment were 90.8% (very feasible). The results of the teacher response percentage were 95% (very feasible). The result of the percentage of student responses of 94.15% falls into the very feasible category. The N-Gain test result of 0.6949 is included in the medium criteria. The t-test results showed significant differences in student learning outcomes after taking part in learning using interactive media based on the Telegram chatbot. It was concluded that interactive media based on the Telegram chatbot was suitable and adequate for subjects of the Indonesian language. The research implication is that Telegram chatbot-based interactive media can be used in learning Indonesian.

## 1. INTRODUCTION

The development of science and technology has had a major influence on the majority of sectors in life, one of which is education. Education includes all efforts made by an institution to provide its students with good skills, awareness of social ties and problems that occur in society, with the aim that they can develop quality competencies (Davies et al., 2017; Mulyani & Haliza, 2021; Tere et al., 2020). In the world of education, educators have a significant role in improving the quality of education. In the era of industrial revolution 4.0, the role of educators is no longer just about conveying knowledge to students, but also about creating creative and innovative learning experiences that suit the challenges of 21st century learning (Qureshi et al., 2021; Sudana et al., 2019; Yestiani & Zahwa, 2020). In the face of continuous changes in science and technology, implementing innovative learning methods has become a challenge that must be overcome by educational institutions throughout the world. Skills in understanding the latest technology are considered an indicator of a country's achievement and success (Mashudi, 2021; Sadikin & Hakim, 2019; Sofiani & Frinaldi, 2023).

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Successful teaching strategies require a combination of effective teaching methods and mastery of technology. This shows that the relationship between learning and technology has become closer in the last few decades (Khairani et al., 2020; Nursyam, 2019; Widiyanto, 2021). In this case, the hope is that educators will not just use one method when educating, but will use various methods so that it is not monotonous, so that it will attract students' interest when learning. Apart from that, in order to increase students' interest in learning, the use of interesting learning media is also part of the tools that educators can apply (Freddy et al., 2019; Muswita et al., 2018). This interesting learning media was developed to adapt to the material to be provided in order to gain a better understanding of the material with the help of this media during the learning process (Arsyad & Lestari, 2020; Khoiruman, 2021). Choosing learning media among the many media is considered an important step. With the rapid development of technology, there are various tools that make it easier for teachers or educators to prepare learning media (Cahyani & Suniasih, 2022; Hanifah Salsabila et al., 2020; Putra & Salsabila, 2021).

However, in practice, many teachers do not optimally use technology-based media. This is proven by previous research which shows that teachers do not utilize technology in learning and have limited understanding in utilizing technology-based media (Dwiyi et al., 2020; Raihany et al., 2022; Winda & Dafit, 2021). This matter leads to the results of observations and interviews carried out at SD Negeri 1 Ploso Pacitan, a problem was found, namely that the teachers mostly explained the material using the lecture method without teaching aids. Therefore, most students are passive, resulting in students feeling bored while studying. This has an impact on students' low interest in learning, resulting in unsatisfactory learning outcomes (Mubai et al., 2020; Sentarik & Kusmariyatni, 2020; Yuliansih et al., 2021). This is proven by the results of the Final Semester Summative Evaluation on writing transitive and intransitive sentences, where 12 students (60% percentage) got a score below the KKTP, while 8 students (40% percentage) got a score above the KKTP. Thus, students need learning media that can motivate them to learn Indonesian more enthusiastically.

One solution that can be implemented is through the development of media that can support educators in explaining learning material and produce active and interesting learning for students, such as interactive media (Hartanto et al., 2022; Lestari & Sismulyasih Sb, 2022). Interactive media is a digital service in an information technology system that responds to user actions through the presentation of audio, visual or audiovisual content (Jabar & Ahmad, 2018; Lestari & Sismulyasih Sb, 2022). So, interactive learning media can be interpreted as multimedia that helps convey messages or information from educators to students by involving two-way communication between multimedia and users, namely students, with the aim of facilitating the learning stages (Faradisa, 2023; Rihani et al., 2022). Interactive media which is based on the Telegram Chatbot is part of an example of interactive media that can be used by educators (Dwi Saputri et al., 2023; Putra & Dermawan, 2021).

In Chatbot, there is artificial intelligence or AI (Artificial Intelligence) which can imitate conversations like those carried out by humans when chatting or talking. Telegram is a cloud-based instant messaging platform that has become a popular communication tool for various groups. Telegram was chosen because of its security, ease of setup, and proven reliability (Doni & Zain, 2019; Herfian & Adriansyah, 2021; Sudiarmika, 2021). Telegram Chatbot-based interactive media was developed using a programming language system and integrated with the Telegram Bot API. The use of interactive media based on Telegram chatbots can make learning activities more optimal. The advantage of this media is that it is able to provide answers or information automatically without having to wait or search for answers manually, making it easier for teachers to present material without having to communicate directly with students (Iskandar Mulyana et al., 2023; NR Putra & Dermawan, 2021). Previous research states that the use of interactive multimedia can improve student learning outcomes (Linda et al., 2018; Suyatna et al., 2018). Previous research findings also state that chatbot media is effective, practical, and certainly has its own appeal for students (Hartati & Manullang, 2022; Zahour et al., 2020). Through this media, information can be obtained more efficiently because it is easy to use anywhere and at any time. It can be concluded that Chatbot-based interactive media can help students. The advantage of this media is that it is interactive media based on the Telegram Chatbot which effectively trains students' critical thinking skills on learning material.

The use of Telegram chatbots has a positive impact on learning because it can increase student motivation when studying and attract student interest, as a result students enjoy learning activities (Safitri et al., 2023; Syifa, 2022). Using Telegram chatbots can improve mastery of learning material. However, there has been no study regarding Telegram Chatbot-Based Interactive Media in Indonesian Language Subjects for fourth grade elementary school students. Based on this, the aim of this research is to develop Telegram Chatbot-Based Interactive Media in Indonesian Language Subjects for fourth grade elementary school students. With the Telegram Chatbot, students can repeat the learning that has been explained previously without having to be accompanied by an educator.

## 2. METHODS

This type of research is development research (Research and Development/R&D) which uses the Sugiyono model with eight stages. The eight stages include potential and problems, data collection, product design, design validation, design revision, initial trials, product revisions, and usage trials (Faidar et al., 2023; Hendrawati et al., 2021). At the potential and problem stage, observations are made regarding problems occurring in the field. The data collection stage was carried out to collect research data. The product design stage is carried out by product development Telegram Chatbot-Based Interactive Media in Indonesian Language Subjects for fourth grade elementary school students. The design validation stage is carried out to test validity product Telegram Chatbot Based Interactive Media. In the revision stage, product revisions are carried out based on input from experts. The trial usage phase was carried out to test the effectiveness of the Telegram Chatbot Based Interactive Media product in Indonesian Language Subjects for fourth grade elementary school students. This research was carried out at SDN 1 Ploso Pacitan, Pacitan District, Pacitan Regency, East Java Province. The subjects of this research were fourth grade educators at SDN 1 Ploso, 1 material expert and 1 media expert, 6 initial trial students, and 14 test and usage trial students. The initial test subjects were 6 students in class IV at SDN 1 Ploso, including 2 individuals as top ranked students, 2 individuals as middle ranked students, and 2 ranked students based on cognitive aspects. The test subjects for use were 14 grade IV students at SDN 1 Ploso.

The methods used to collect data are observation, interviews, questionnaires and tests. Observations and interviews are used to collect data in the form of problems that occur in the field. Questionnaires are used to collect data in the form of expert assessments regarding Developed Telegram Chatbot Based Interactive Media. Tests are used to measure student learning outcomes after using Telegram Chatbot-Based Interactive Media. Tests which include pretest and posttest and non-tests which include observation, interviews, questionnaires and documentation are the methods used when collecting data. The data collection instruments used were observation and interview guidelines, expert validation questionnaires, teacher and student response questionnaires, and giving pretest and posttest questions to students. The data collection instrument grid is presented in Table 1, Table 2, and Table 3.

**Table 1. The Material Expert Validation Grid**

No.	Aspect	Indicator
1	Curriculum Appropriateness	In accordance with learning objectives
2	Cognitive content	Material is easy to understand As independent learning
3	Information Presentation	Clarity in conveying information
4	Artistic and Aesthetic	Systematic presentation of material Make it easier for teachers to deliver material Truth and accuracy of content

(Modification of Setiawan et al., 2023)

**Table 2. The Media Expert Validation Grid**

No.	Aspect	Indicator
1	Curriculum Appropriateness	In accordance with learning objectives
2	Ease of Navigation	Navigation structure Ease of use Management Operating system
3	Media Integration	Integrating cognitive, affective and psychomotor aspects
4	Artistic and Aesthetic	Display audio, video, text and graphics Relevant to the content
5	Overall Function	Made according to user capabilities Present the learning that users want

(Modification of Setiawan et al., 2023)

**Table 3. The Teacher and Student Response Questionnaire Grid**

No.	Aspect	Indicator
1	Curriculum Appropriateness	In accordance with learning objectives
2	Ease of Navigation	Navigation structure Ease of use

No.	Aspect	Indicator
		Management
		Operating system
3	Media Integration	Integrating cognitive, affective and psychomotor aspects
4	Artistic and Aesthetic	Display audio, video, text and graphics
		Relevant to the content
5	Overall Function	Made according to user capabilities
		Present the learning that users want

(Modification of Setiawan et al., 2023)

The data obtained in this research was analyzed using various techniques, including qualitative, quantitative, N-Gain data analysis and inferential statistics (t-test). Qualitative descriptive data analysis is used to process suggestions and comments from experts on Telegram chatbot-based interactive media. Meanwhile, quantitative descriptive data analysis is used to process data from expert validation assessments and response questionnaires from teachers and students (Waruwu, 2023). N-Gain analysis was carried out to investigate the average increase in students' pre-test and post-test in learning transitive and intransitive sentences. Meanwhile, inferential statistical analysis (t-test) was carried out to test the hypothesis by analyzing the pre-test and post-test results (Wahab et al., 2021). The results obtained from expert assessments and teacher & student response questionnaires are then converted into media suitability criteria (Ma'aniyah & Mintohari, 2019). Media eligibility criteria are outlined in Table 4.

**Table 4.** The Media Eligibility Criteria

Percentage	Criteria
0%-20%	Not Really Worth it
21%-40%	Not Feasible
41%-60%	Decent Enough
61%-80%	Worthy
81%-100%	Very Worthy

### 3. RESULT AND DISCUSSION

#### Results

The product developed in this research is interactive media in the form of a Telegram chatbot in the Indonesian language subject, transitive and intransitive sentence material using the Sugiyono model. The results of each stage of Sugiyono's model are as follows: the first stage, namely potential and problems. The potential and problem analysis stage is the first stage which is carried out through observations and interviews with class IV teachers at State Elementary School 1 Ploso, Pacitan Regency. The result of this stage is that there is potential in the form of learning tools that support students such as LCD projectors, internet access in the form of WiFi in class, personal cellphones, and students' ability to use technology-based tools. Based on the results of interviews with fourth grade educators at SD Negeri 1 Ploso, Pacitan Regency, there are problems related to student learning outcomes in transitive and intransitive sentence material and the absence of interactive media used by teachers in teaching. Teachers mostly explain the material using the lecture method without learning media. Therefore, the majority of students are passive, which makes students bored during learning activities. This has an impact on students' low interest in learning. The impact of students' lack of enthusiasm in learning makes the average student score on this material below the Criteria for achieving learning objectives (75). This is reinforced by data on student learning outcomes for 12 students with a percentage of 60% of the 20 students getting scores below the Criteria for achieving learning objectives (75) in learning transitive and intransitive sentences. This proves that the learning objectives have not been realized optimally.

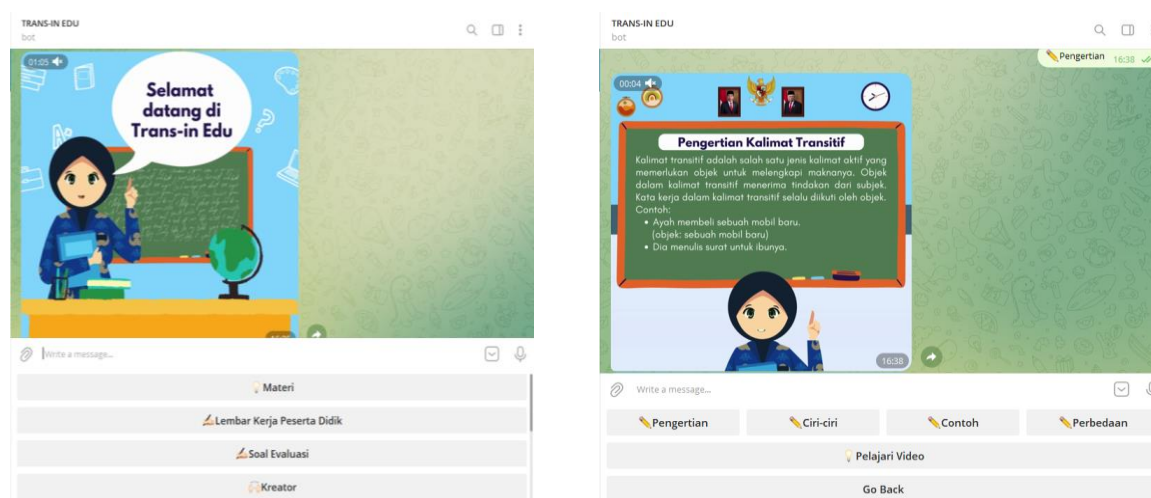
The second stage, namely data collection. In this stage, a questionnaire analysis of the needs of educators and students for interactive media based on the Telegram chatbot was carried out. The results of the analysis from this stage will be used to develop interactive media based on the Telegram Chatbot. The results obtained were that teachers and students agreed that transitive and intransitive sentence material was taught using the Telegram Chatbot in accordance with the components of interactive media. The third stage is product design. In designing the development of Telegram chatbot-based interactive media, through stages, among others, determining learning outcomes, indicators and learning objectives according to the instructions of the class IV teacher in transitive and intransitive sentence material. Learning outcomes and indicators are visible in Table 5.



**Table 5.** The CP and Indicators of Transitive and Intransitive Sentence Material

Learning Outcomes	Learning Objectives
Students are able to write narrative texts, descriptions, reconstruction texts, procedural texts and exposition texts with a variety of sentences, detailed and accurate information on various topics	<ol style="list-style-type: none"> <li>1. Through learning activities using the Telegram Chatbot learning media, students can analyze transitive and intransitive sentences obtained from text correctly</li> <li>2. Through discussion activities, students can make transitive and intransitive sentences based on a picture of an object correctly</li> </ol>

Next, create a storyboard for the content of the media program. Based on the design of the storyboard that was created, interactive media based on the Telegram Chatbot was developed. Next is coding to create a program that connects to the Telegram Bot API. All interactive media components that have been designed are integrated into the Telegram Bot. Learning materials, images, videos, e-LKPD, evaluations and audio are imported into the bot that has been created. The results of developing interactive media based on Telegram chatbots are presented in [Figure 1](#).



**Figure 1.** The Developed Telegram Chatbot Based Interactive Media

The fourth stage, namely design validation. In this stage, validation is carried out by experts including material experts and learning media experts with the results of the assessment presented in [Table 6](#).

**Table 6.** The Expert Validation Results

No.	Subject	Results	Category
1	Material Expert	92.3%	Very Worthy
2	Media Expert	90.8%	Very Worthy

Based on [Table 6](#), it can be analyzed that the results of the material expert assessment of 92.3% fall into the very appropriate group and the results of the media expert test assessment of 90.8% fall into the very appropriate group. So, the expert test average score was 91.55%, which is in the very feasible category. The fifth stage is design revision. Revisions carried out are in line with comments and suggestions from experts. There is a revision from the material expert regarding the use of capital letters which is not in accordance with PUEBI. The media design before revision and after revision is shown on [Figure 2](#).



Figure 2. The Telegram Chatbot-Based Interactive Media Design Before and After Revision

The sixth stage, namely initial trials. In the sixth stage, product testing and trials were carried out on class IV students at SDN 1 Ploso, Pacitan Regency a total of 6 students consisting of 2 top ranked students, 2 middle ranked students, and 2 lower ranked students based on cognitive aspects. The pre-test was carried out before learning using media, while the post-test was carried out after learning using interactive media based on the Telegram Chatbot. The pre-test and post-test scores are presented below Table 7.

Table 7. The Initial Trial Pre-test and Post-test Scores

No.	Data	Average Value	Average Classical KKM
1	Pre-test	70.8	33%
2	Post-test	87.5	100%

Based on Table 7, the average pretest score was 70.8 and the average posttest score was 87.5 with an average increase in classical Minimum Mastery Criteria of 67%. At this stage, teacher and student response questionnaires were also given. The results of the analysis of questionnaire responses from educators and students can be observed in Table 8.

Table 8. The Results of Questionnaire Analysis of Teacher and Student Responses

No.	Subject	Percentage	Category
1	Teacher	95%	Very Worth It
2	Student	94.15%	Very Worth It

Based on the pretest & posttest scores, there was an average increase in classical KKM of 67%. The results of the analysis of questionnaire responses from educators and students prove that the group is very suitable for interactive media based on Telegram chatbots in learning to write transitive and intransitive sentences. As a result, it can be concluded that the media that was developed was effectively used at the trial usage stage.

The seventh stage is product revision. Product revisions were carried out after investigating the shortcomings of Telegram Chatbot-based interactive media after the product was tested at the initial trial stage. The revisions carried out were based on the teacher's suggestions, input and comments in testing and initial trials regarding language pronunciation in the voice accompaniment of video illustrations when explaining learning material, some of which were not loud enough. The eighth stage, namely trial use. In this stage, testing and trial use was carried out on 14 class IV students at SDN 1 Ploso, Pacitan Regency to see the effectiveness of interactive media based on the Telegram chatbot in learning transitive and intransitive sentences. Usage trials are carried out in accordance with the teaching module. The results of the N-Gain test and t-test of the pretest and posttest values in the usage trial are the basis for investigating the effectiveness of using interactive media based on the Telegram chatbot. Based on the pre-test and post-test scores, there can be seen an increase or difference in student learning outcomes. This was proven through the t-test, after a normality test was carried out. The results of normality testing are presented in Table 9.

**Table 9.** The Normality Test Results

No.	Data	Kolmogorov-Smirnov	Shapiro-Wilk
1	Pre-test	0.200	0.106
2	Post-test	0.200	0.415

Based on the previous table, the pretest test results using Kolmogorov-Smirnov and Shapiro-Wilk obtained results of 0.200 and 0.106. So, the significance of the pretest value exceeds 0.05 (5% degree of significance) as a result the data is normally distributed. The results of the posttest scores with Kolmogorov-Smirnov and Shapiro-Wilk obtained results of 0.200 and 0.415. It can be observed that the significance of both columns exceeds 0.05 (5% significance level), as a result the posttest value data has a normal distribution. Next, a t-test was carried out using SPSS version 25, the results of the t-test are presented in Table 10.

**Table 10.** The T-test results

No.	Data	t-count	t-table	Criteria
1	Pre-test	9.014	2.179	H0 is Rejected and Ha is Accepted
2	Post-test			

Based on Table 10, the t-count value is 9.014 while the t-table is 2.179 at the five percent significance level. Therefore, the t-count exceeds the t-table ( $9.014 > 2.179$ ), as a result H0 is rejected and Ha is accepted. The results above prove that significant differences in student learning outcomes were found after taking part in learning using interactive media based on the Telegram chatbot. Next, an average increase test (N-Gain) was carried out to investigate the average increase in students' pretest and posttest in learning Indonesian. The N-Gain test results, pretest and posttest scores are presented in Table 11.

**Table 11.** The N-Gain Test Results

No.	Data	Average Value	N-Gain	Criteria
1	Pre-test	60.7	0.6949	Currently
2	Post-test	85.71		

Based on the Tabel 11, the average pretest score was 60.7 and the average posttest score was 85.71 with an average increase test result (N-Gain) of 0.6949 with medium criteria. This means that the use of Telegram chatbot-based interactive media is effective on learning outcomes in Indonesian language subjects.

## Discussion

The results of data analysis show that interactive media based on the Telegram Chatbot which has been developed appropriately and effectively is used in learning transitive and intransitive sentences. This is caused by aspects that can influence. The First, the development of the Sugiyono learning model which is used to provide results in the form of special products as well as carrying out product feasibility tests that have a gradual nature. Starting from the potential and problem stages, data collection, product design, design validation, design revision, initial trials, product revisions, and usage trials so that Telegram Chatbot-based interactive media is useful for improving the quality of learning. Previous research findings also reveal that validly developed interactive media can and is suitable for use in learning (Diyana et al., 2020; Susilawati & Satriawan, 2018). The appropriateness of learning media is very important to pay attention to because learning media functions as a carrier of information from the source (teacher) to the recipient (students) (Dewi & Izzati, 2020; Mulyati et al., 2021). Learning media must be in accordance with the learning objectives, characteristics of students, and the material being studied, as well as the learning methods or experiences provided to students (Hendi et al., 2020) (Diyana et al., 2020; Karisma et al., 2019; Susilawati & Satriawan, 2018).

The Second, the Telegram chatbot-based interactive media that has been developed is considered very feasible because it takes into account all aspects required in media development. This media is designed according to the components of interactive media and adapted to the needs and characteristics of students at the elementary school level, so that it supports students to understand the material presented. This finding is based on previous research which proves that the use of learning media that is suitable for students' needs and characteristics can trigger a positive response according to their stage of development (Amri et al., 2023; Ginting et al., 2022). Apart from that, the use of video illustrations in the media supports

students to understand the lesson material and raises student interest (Aini et al., 2022; Sunardin & Kasma, 2023). The content of the material developed refers to the indicators and learning outcomes that have been prepared. The learning objectives developed are in accordance with the ABCD components, namely Audience, Behavior, Condition, and Degree. Interactive media is designed by combining clear sound accompaniment, brightly colored image compositions, and video illustrations that can stimulate students' interest in learning (Kasturi et al., 2022; Khan et al., 2015). Organized learning planning and regular implementation can help teachers create quality learning activities (Kasturi et al., 2022; Pattanang et al., 2021).

The Third, interactive media based on the Telegram chatbot can improve student learning outcomes. Students get more information related to the material being studied through the use of interactive learning media. This media is more effective when explaining the information provided by educators to students, enabling two-way communication between the media and students, so that the learning process can take place optimally (Ilfiana et al., 2021; Setyaningsih et al., 2020). Interactive media can make learning more interesting and fun, which will make students more focused and interested in learning (Sumarsono & Sianturi, 2019; Triana et al., 2021). Interactive media can help students understand the material being explained, because it uses multimedia that is more interesting and easy to understand, such as images, video and sound (Sumarsono & Sianturi, 2019; Widjayanti et al., 2019). Research has shown that the use of interactive media can improve student learning achievement (Darmawan et al., 2017; Mulyati et al., 2021).

Other findings also reveal that interactive media can increase motivation and enthusiasm for learning (Pertiwi & Dibia, 2018; Wulandari et al., 2017). Previous research findings prove that Telegram chatbot-based interactive media plays an active role in developing creative and innovative learning (Hartati & Manullang, 2022). It can be concluded that interactive media based on the Telegram chatbot developed can be used in elementary school students' learning. The advantage of interactive media based on Telegram chatbots is that it attracts students' interest in learning because it utilizes technology in learning, this is a supporting factor in increasing students' learning motivation which ultimately has an impact on their learning outcomes. The limitation of this research is that the media developed, namely interactive media based on the Telegram Chatbot, is only intended for fourth grade elementary school students. The implication of this research is that the interactive media based on the Telegram chatbot that was developed can improve the learning outcomes of elementary school students. Telegram chatbot-based interactive media in elementary schools is effectively implemented in Indonesian language subjects.

#### 4. CONCLUSION

Based on the results of the data analysis and discussion, it was concluded that the Telegram chatbot-based interactive media developed had very good qualifications, so it was suitable for use in learning. The results of the t-test showed significant differences in student learning outcomes after taking part in learning using interactive media based on the Telegram chatbot. The N-Gain test results fall into the medium criteria. It was concluded that interactive media based on the Telegram chatbot was suitable and effective for use in Indonesian language subjects.

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