Student Learning Difficulties in Terms of the STIF in Framework of Fractional Material

Kamid[1]*, Rina Kusuma Dewi[2], Dwi Agus Kurniawan[3], Miftahul Zannah Azzahra[4], Ahmad Mansur Nawahdani[5] iD

[1,2,3,4,5]Prodi Pendidikan Matematika dan Ilmu Pengetahuan Alam, Universitas Jambi, Jambi, Indonesia

A R T I C L E   I N F O

A B S T R A K

Kesulitan dalam mempelajari matematika dimungkinkan karena kesulitan dalam mempelajari fakta, konsep, operasi dan prinsip. Siswa yang kesulitan belajar matematika sering melakukan kesalahan dalam berhitung. Tujuan dilakukannya penelitian ini yaitu untuk menganalisis kesulitan-kesulitan yang dialami siswa pada materi pecahan dengan jenis kecerdasan thinking, feeling dan sensing dalam pembelajaran matematika. Pendekatan penelitian ini menggunakan pendekatan kualitatif dengan jenis studi dokumen dan wawancara. Adapun sampel dalam penelitian ini yaitu siswa sekolah dasar kelas empat. Teknik pengambilan sampel yang digunakan berupa random sampling. Data primer dan data sekunder menjadi sumber data dalam penelitian ini. Instrument yang digunakan berupa lembar wawancara dan soal mengenai materi pecahan dalam pelajaran matematika. Analisis data yang dilakukan berlandaskan dengan model Miles and Huberman. Berdasarkan hasil tes STIFIn diperoleh bahwa Siswa Feeling, Sensing dan Thinking lebih unggul penguasaan konsep pecahan dari pada siswa Insting dan Intuiting. Selanjutnya, strategi siswa dalam mengembangkan strategi penyelesaian masalah pecahan yaitu membandingkan pecahan menggunakan pecahan patokan lainya yang sederhana, membandingkan pecahan berdasarkan penyebut dan pembilang, membuat representasi pecahan berupa bagun datar untuk memahami dan membandingkan pecahan.

A B S T R A C T

Learning mathematics is possible because of problems in learning facts, concepts, operations and principles. Students who need help teaching mathematics often make mistakes in counting. This research aims to analyze the difficulties experienced by students in fractional material with the types of intelligent thinking, feeling and sensing in learning mathematics. This research approach uses a qualitative approach to document study and interviews. The sample in this study was fourth-grade elementary school students. The sampling technique used is random sampling. Primary data and secondary data are the source of data in this study. The instrument used is in the form of interview sheets and questions regarding fractional material in mathematics lessons. Data analysis was carried out based on the Miles and Huberman model. Based on the results of the STIFIn test, it was found that the Feeling, Sensing and Thinking students were superior in mastering the concept of fractions to the Instinct and Intuiting students. Furthermore, students' strategies in developing fractional problem-solving strategies are comparing fractions with other simple standard fractions, comparing fractions based on the denominator and quantifier, and making fraction representations in the form of flat structures to understand and compare fractions.

1. INTRODUCTION

The importance of education is one of the pillars in living life in the future. Education is a learning process for students so that they can know, evaluate and develop their own abilities through teaching, training, and research (Astalini et al., 2022; Ernawati et al., 2021; Haryanto et al., 2016). Education is one of the efforts to increase the potential and intelligence of the nation's next generation (Dodi et al., 2021; Kamid et al., 2022; Nawahdani et al., 2021). Education can be a process of increasing one's intelligence so that with this increase it can form quality human beings (Ernawati et al., 2021; Roffiq et al., 2017; Timang

et al., 2021). One of the lessons taken and taught in the world of education is learning mathematics. Mathematics is one of the subjects taught at every level of education from elementary school to university. Through learning mathematics students can solve problems that exist in everyday life (Kamid et al., 2022; Kenedi et al., 2019; Octavyanti & Wulandari, 2021). Mathematics subjects also place more emphasis on students' reasoning abilities (Cresswell & Speelman, 2020; Fuadi et al., 2022; Kamid et al., 2021). Even though mathematics has an important role, in fact mathematics is still considered a difficult subject by some students. Some students, especially in elementary schools, still think that mathematics is a subject that is difficult to understand (Capuno et al., 2019; Novikasari, 2017; Yuniawardani & Mawardi, 2018).

Difficulties in learning mathematics are possible due to difficulties in learning facts, concepts, operations and principles. There are 3 things that cause students to experience difficulties in learning mathematics including perception (metamatic calculations), intervention and extrapolation of the implementation of the teaching and learning process will greatly determine the extent of success that must be achieved by a mathematics subject (Amaliyah et al., 2022; Jamal, 2019; Unaenah et al., 2022). Students who have difficulty learning mathematics often make mistakes in counting (Rosanti et al., 2022; Runtukkahu, 2014; Utari et al., 2019). The causes of students' difficulties in solving problems are because students do not understand the material that has been presented, the lack of students paying attention to the method of completion that has been conveyed by the teacher and the learning process that has not developed students' reasoning abilities (Ayu, 2020; Putridayani & Chotimah, 2020; Supena et al., 2021). The abilities possessed by students in mathematics lessons differ from one student to another. One approach that can classify student characteristics is the STFIn test. STIFIn is a concept to identify human intelligence based on the dominant brain operating system and can be identified by scanning fingerprints. The STIFIn method explains how the brain works based on its operating system, not its hardware capacity (Agustina et al., 2022; Alindra, 2018; Simanullang, 2022). The STIFIn method is the application of the STIFIn concept which compiles theories from psychology, neuroscience, and human resource science. The main principle refers to the concept of a single intelligence from Carl Gustaav Jung (Mundiri & Zahra, 2017; Poniman & Amalia, 2019). STIFIn is a description of sensing (abbreviated as S), thinking (abbreviated as T), intuition (abbreviated as I), feeling (abbreviated as F), instinct (abbreviated as In). According to the STIFIn concept, it is not the hemisphere that has the greatest capacity that is considered dominant, but rather the one that is frequently used, functions most actively, is most automatically used, and becomes the human subconscious (Asbari et al., 2019; Sholeh et al., 2022).

This research is in line with research conducted by previous study which states that the learning cycle in using the concept of STIFIn, namely sensing, thinking, intuiting, feeling and instinct (Ayu, 2020). As for what distinguishes this research from previous research, namely in previous studies describing student mathematics learning outcomes using the concept of STIFIn and only focus on sensing. This research is in line with the research conducted which states that the STIFIn method needs to be studied more deeply, especially its use in the field of education (Alindra, 2018). This is obtained through the axiological study of the Stifin method which stands for Sensing (abbreviated S), Thinking (abbreviated T), Intuiting (abbreviated I), Feeling (abbreviated F), instinct (abbreviated in). As for what distinguishes this research from previous studies, namely in this study implementing the Stiphin method in learning mathematics to find out student learning difficulties. The importance of this research is to analyze the difficulty of learning mathematics of students through the STIFIn method. With this research it is hoped that the teacher can find out the difficulties faced by students and can provide solutions and stimulus based on each difficulty faced by these students. The importance of knowing the difficulties faced by students is that the teacher can maximize the learning process by considering the difficulties faced by students. The novelty of this study is in the form of finding out what material is considered difficult by each elementary school student with the type of intelligence Sensing, Thinking, Intuiting, Feeling and Instinct in learning mathematics, and can also describe the difficulties experienced by students for each the material. The implications of this research are that it is hoped that students, teachers and parents can find the right solution to the difficulties experienced by students without having to provide uniform treatment.

2. METHOD

This research approach uses a qualitative approach with a type of document study and interviews. The qualitative method is to seek a deep understanding of a phenomenon, fact or reality (Yusanto, 2020). Meanwhile, according to previous study document study is the collection of literary sources that are relevant to the problems discussed and then grouped systematically related to problems in research (Sanjaya, 2020). In this study, students first work on the questions first, after that the interview was conducted to find out each type of intelligence from students, namely sensing, thinking,

intuiting, feeling and instinct. In conducting qualitative research, researchers need sources to obtain data from interviews. The sample in this study is a fourth grade elementary school student consisting of 16 students, each representing each type of intelligence, namely sensing, thinking, intuiting, feeling and instinct. The sampling technique used is random sampling. Random Sampling is a sampling method in which each member of the population is given the same opportunity to be selected as a sample (Syaputra, 2022).

Primary data and secondary data are the source of data in this study. Primary data was obtained through interviews with the sample used in this study, while secondary data was obtained through document study. Primary data is data obtained directly from the cooperative and secondary data is data collected and obtained from documents processed to support research. The data collection technique in this research is by using two ways, firstly by conducting interviews and secondly by studying documents from previous studies. Interviews conducted by researchers aim to record opinions, feelings, emotions related to individuals (Cunaya & Apriyansyah, 2022). After the researcher got the research data, then the researcher conducted data analysis. Data analysis was carried out which consisted of data collection, data reduction, data display, and conclusions (Miles et al., 2014). Researchers analyze and conclude the type of cognitive style that dominates the results of questions and interviews. After obtaining the type of cognitive force, then analyzes and examines each type of cognitive style of the Stiphin method and find supporting sources through document studies from previous research.

3.   RESULT AND DISCUSSION

Result
The following are the results of the research obtained from high grade students, namely grade IV of elementary school. Of the 16 students who have been tested and the results of the classification characteristics are explained in **Table 1**.

Table 1. STIFIn TEST Results

Test Results	Count of Subjects
Feeling	5
Insting	1
Intuiting	1
Sensing	5
Thinking	4

In Table 1 it can be seen that students of Feeling, Sensing and Thinking are superior to the mastery of the fractional concepts than students instinct and intuiting. Therefore further discussion is only on students of Feeling, Sensing and Thinking. Research data about student mathematics learning difficulties obtained from the results of interviews conducted by researchers with research subjects, namely one student of the type of cognitive style feeling, sensing and thinking. Indicators of students' learning difficulties analyzed by researchers included: (1) spatial relationship disturbances, (2) perseveration, (3) difficulties in recognizing and understanding symbols, and (4) difficulties in language and reading.

Student Analysis of Feeling
Based on the results of interviews students have a feeling of intuition, a feeling of guessing values that contain approximate answers (uncertainty). The example of the type of student's failed answer in answering the student's feeling is show in Figure 1.
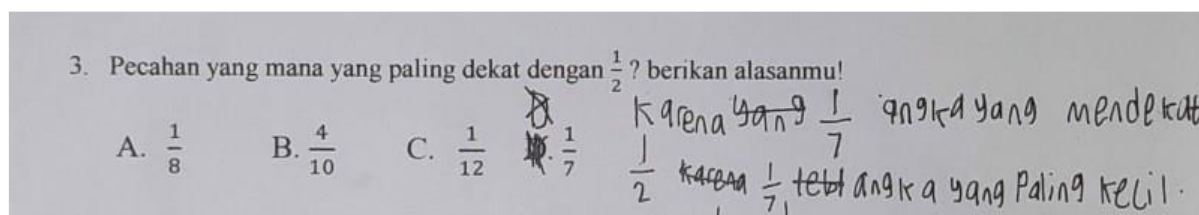

Figure 1. Answers to the Fraction Concept of Feeling Students

Base on Figure 1, feeling students use feelings, their intuition is 7, the smallest and close to 2. It can be seen that feeling students tend to use their guesses to answer questions and by using the denominator as the basis of their rationality. Other findings on students' correct feeling answers show the students' luck in using their feelings or intuition in answering questions. When asked further to represent 1/8 4/10 1/12 in fractional form the students could not. Students also make duplicates of rectangles with the intention of making the whole shape into one, but they shade it to 2/8 without simplifying it. Students' multiple representation answers feeling is show in Figure 2.
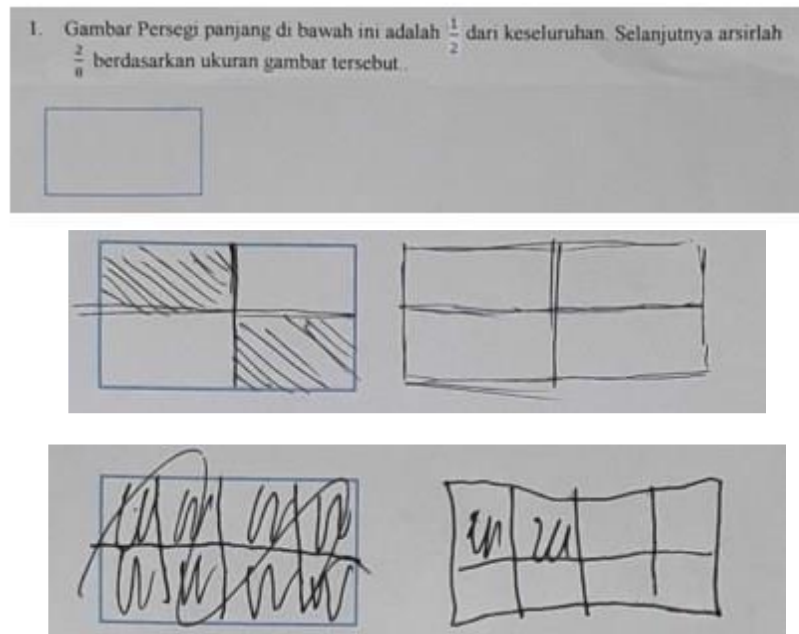

Figure 2. Students' Multiple Representation Answers Feeling

Student Thinking Analysis

Thinking students can build creativity and logical reasons to solve fraction problems. Answers to the fraction concept of thinking students is show in **Figure 3**.
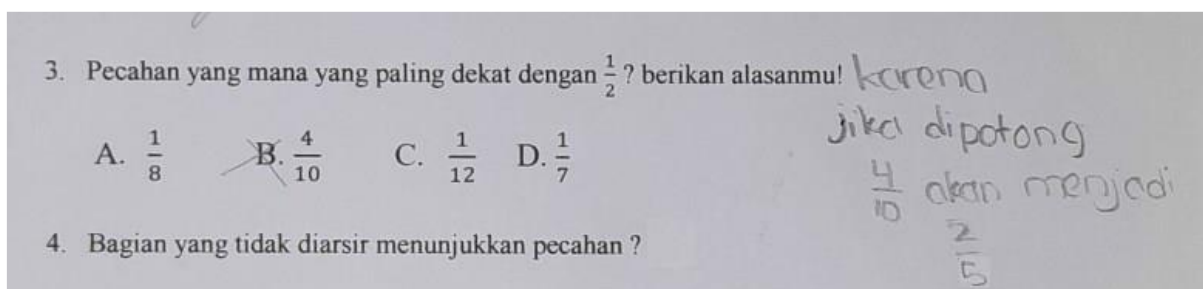

Figure 3. Answers to the Fraction Concept of Thinking Students

Base on Figure 3, the strategy in answering the questions of thinking students who are able to solve fractional problems shows that students have creativity and think analytically by simplifying fractions, and making comparisons of fractions. Analysis of the results of the interviews. The interviews with student answers made a simplification of 2/5. The division of the "cut" students used the denominator as a comparison. "Then students made a comparison of fractions for each answer choice and the closest to "large" was 4/10.

Student Sensing Analysis

Another difficulty that arises for sensing students is that students experience difficulties in operating questions with the disturbance attached to certain objects. Students fail to understand fractional objects, so they cannot understand the context of the problem. Answers to the fraction concept of sensing students is show in Figure 5.
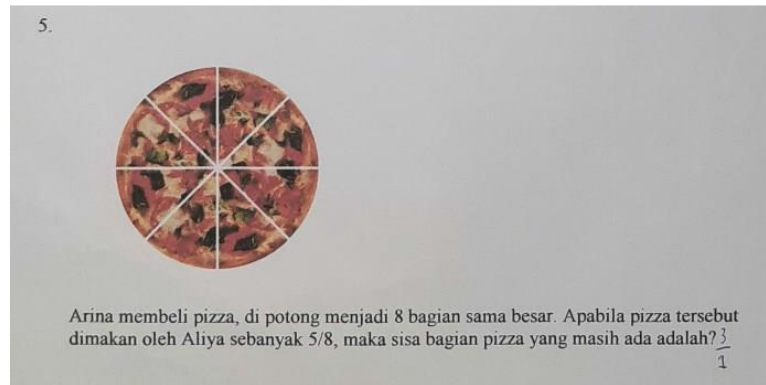
Figure 5. Answers to the Fraction Concept of Sensing Students

Discussion

A problem that often involves student errors in mathematics is the problem of calculating fractions. Students' difficulties in understanding the concept of fractions, make students feel difficult in working on questions related to fractional material (Badriyah et al., 2020; Safriani et al., 2019). According to previous study students' learning difficulties in mathematics subjects such as if ordered by the teacher, students do not study the material in advance and when the mathematics learning process takes place behind there are students talking with their desk mates, do not listen to what the teacher is explaining in front of the class, do not take notes on the material conveyed by the teacher properly and if given an assignment always look at the work of his friends (Natasya, 2019). Finding student learning styles will allow students to determine their personal and learning strengths and weaknesses. STIFIn then applies five concepts of machine intelligence namely Sensing, Thinking, Intuiting, Feeling, and, Instinct (Abdurrahman & Kibtiyah, 2021; Farida, 2022). Previous study states that the thinking personality type has critical thinking skills, in practice it uses logical thinking and objective analysis in making decisions (Ramalisa, 2013). While feelings are those that involve feelings and values used in making decisions.

Based on the results of interviews students have a feeling of intuition, a feeling of guessing values that contain approximate answers (uncertainty). It can be seen that feeling students tend to use their guesses to answer questions and by using the denominator as the basis of their rationality. Other findings on students' correct feeling answers show the students' luck in using their feelings or intuition in answering questions. This is in line with other research findings that students feel with characteristics that cannot think analytically, and will find it difficult to determine details and to construct rational mathematical reasons (Borromeo Ferri, 2010; Witkin et al., 1977). Feeling students have difficulties in simplifying fractions and adding up fractions. This learning difficulty is categorized as "preference". The strategy in answering students' thinking questions that are able to solve fractional problems shows that students have creativity and think analytically by simplifying fractions, and making comparisons of fractions. This analytical ability in solving this problem is supported by the characteristics of thinking students, namely analytical and clever (Alindra, 2018; Fitzsimons, 2015). Mistakes in solving math problems are comprehension errors which result in comprehension difficulties, namely difficulties in the form of students being able to read all the words in the question, but not understanding the meaning of all the words, so students are unable to move. Further along the proper troubleshooting flow. Other similar research said that errors in solving word problems were incomplete errors in writing down what was known and asked, mistakes in writing down what was known from the questions, and not writing down what was asked (Natasya, 2019). This research is in line with research conducted which states that students with Stiphin Sensing and thinking types are higher than the power of intuiting and feeling mathematics (Rosanti et al., 2022). While the results of research conducted by researchers found that students of Feeling, Thinking and Sensing are higher than intuinting and instinct.

The implication of this study is that the existence of this study can be a reference to educators identify the obstacles or difficulties experienced by students when getting online learning and face -to - face meetings are limited to mathematics based on the type of intelligence. So that the teacher can maximize the learning process by considering the difficulties faced by students. The novelty of this study is in the form of difficulties experienced by students in fractional material based on the type of intelligence. Furthermore, Feeling and Sensing students have learning difficulties in the form of Sensing students, namely students having difficulty in operating questions with disturbances attached to certain objects, Feeling students perceive that the parts that are not shaded are fractions, students do not

understand the spatial context of the whole picture that represents a fraction Students feeling perceives that the part that is not shaded is a fraction, students do not understand the spatial context of the whole picture that represents a fraction.

4. CONCLUSION

The results showed that students with the thinking intelligence type got the highest score compared to sensing, intuition and feeling. Furthermore, there are four student strategies in developing fractional problem-solving strategies, namely comparing fractions using other simple standard fractions such as ½, comparing fractions based on the denominator and numerator, making representations of fractions in the form of flat structures to understand and compare fractions. Suggestions to teachers in learning to pay attention to the characteristics of students both feeling and tinking by paying attention to the potential advantages and disadvantages of each so that they can make mathematics learning effective.

5. REFERENCES

Abdurrahman, S., & Kibtiyah, A. (2021). Strategi Mengatasi Masalah Kesulitan Belajar Siswa Dengan Memahami Gaya Belajar Siswa (Studi Kasus Di Ma Al-Ahsan Bareng. *Jurnal Pendidikan Tambusai*, *5*(3), 6444–6454. https://doi.org/10.31004/jptam.v5i3.1964.

Agustina, S., Saman, W. S. W. M., Shaifuddin, N., & Aziz, R. A. (2022). Reading material selection for bibliotheraphy based on blood type in young adult groups. *Jurnal Kajian Informasi & Perpustakaan*, *10*(1), 89–106. https://doi.org/10.24198/jkip.v10i1.31022.

Alindra, A. L. (2018). Kajian aksiologi metode STIFIn dalam pemetaan mesin kecerdasan manusia. *Titian Ilmu: Jurnal Ilmiah Multi Sciences*, *10*(2), 64–73. https://doi.org/10.30599/jti.v10i2.206.

Amaliyah, A., Oktaviani, D., & Nurrahma, M. I. (2022). Analisis Pengolahan Data Dengan Menggunakan Metode Stad. *Jurnal Sains Dan Teknologi (JSIT*, *2*(2), 1–7. https://doi.org/10.22210/jsit.v2i1.57.

Asbari, M., Nurhayati, W., & Purwanto, A. (2019). The effect of parenting style and genetic personality on children character development. *Jurnal Penelitian Dan Evaluasi Pendidikan*, *23*(2), 206–218. https://doi.org/10.21831/pep.v23i2.28151.

Astalini, A., Darmaji, D., Kurniawan, D. A., & Azzahra, M. Z. (2022). Comparative analysis and student response relationships regarding the inquiry learning model on students' attitudes and character. *AL-ISHLAH: Jurnal Pendidikan*, *14*(4), 5907–5922. https://doi.org/10.35445/alishlah.v14i4.2092.

Ayu, M. (2020). Online learning: Leading e-learning at higher education. *The Journal of English Literacy Education: The Teaching and Learning of English as a Foreign Language*, *7*(1), 47–54. https://doi.org/10.36706/jele.v7i1.11515.

Badriyah, N., Sukamto, S., & Subekti, E. E. (2020). Analisis Kesulitan Belajar Siswa Dalam Menyelesaikan Soal Cerita Matematika Pada Materi Pecahan Kelas III SDN Lamper Tengah 02. *Pedagogik: Jurnal Pendidikan*, *15*(1), 10–15. https://doi.org/10.33084/pedagogik.v15i1.1279.

Borromeo Ferri, R. (2010). On the influence of mathematical thinking styles on learners' modeling behavior. *Journal Für Mathematik-Didaktik*, *31*(1), 99–118. https://doi.org/10.1007/s13138-010-0009-8.

Capuno, R., Necesario, R., Etcuban, J. O., Espina, R., Padillo, G., & Manguilimotan, R. (2019). Attitudes, Study Habits, and Academic Performance of Junior High School Students in Mathematics. *International Electronic Journal of Mathematics Education*, *14*(3), 547–561. https://doi.org/10.29333/iejme/5768.

Cresswell, C., & Speelman, C. P. (2020). Does mathematics training lead to better logical thinking and reasoning? A cross-sectional assessment from students to professors. *PLoS One*, *15*(7). https://doi.org/10.1371/journal.pone.0236153.

Cunaya, C., & Apriyansyah, C. (2022). Analisis Perkembangan Sosial Emosional Anak Usia 5-6 Tahun Melalui Asesment Wawancara Di TK Cahaya Bintang. *Cemerlang: Jurnal Pendidikan Anak Usia Dini*, *1*(1), 1–9. https://doi.org/https://cemerlang-paud-pancasakti.ac.id/index.php/cemerlang/article/view/1.

Dodi, L., Huda, M., & Sufirmansyah, S. (2021). Grounding the Vision of Religious Moderation as a Strategic Step in Preparing the Next Generation of the Nation towards Global Era. *Proceedings of the 2nd International Conference on Islamic Studies, ICIS 2020*, 27–28. https://doi.org/10.4108/eai.27-10-2020.2304176.

Ernawati, M. D. W., Sudarmin, S., Asrial, A., Haryanto, H., Sanova, A., Kurniawan, D. A., & Azzahra, M. Z. (2021). The Influence of Student Interest on Student Learning Outcomes in Science Subjects. *Jurnal Pendidikan Sains Indonesia (Indonesian Journal of Science Education*, *10*(4), 849–861.

https://doi.org/10.24815/jpsi.v10i4.25306.

Farida, K. (2022). Aplikasi Metode STIFIn dan ILHAM terhadap Hasil Hafalan Al-QUran (Eksperimen terhadap Mahasantri Institut Ilmu Al-Quran Jakarta. *JURNAL LENTERA: Kajian Keagamaan, Keilmuan Dan Teknologi*, *21*(1), 52–69. https://doi.org/http://www.ejournal.staimnglawak.ac.id/index.php/lentera/article/view/611.

Fitzsimons, E. (2015). Character education: A role for literature in cultivating character strengths in adolescence. *Master of Applied Positive Psychology*, *8*(1), 135–150. https://doi.org/10.1007/978-94-017-9667-5_7.

Fuadi, R., Johar, R., & Munzir, S. (2022). Peningkatkan Kemampuan Pemahaman dan Penalaran Matematis melalui Pendekatan Kontekstual. *Jurnal Didaktik Matematika*, *3*(1), 47–54. https://doi.org/10.24815/jdm.v3i1.4305.

Haryanto, H., Kurniawan, D. A., Oktavia, N. E., Ariani, D. R., Rahman, A. A., & Azzahra, M. Z. (2016). Attitude and Interest Junior High School Students: How Difference and Correlation in Science Learning. *Jurnal Penelitian Pendidikan IPA*, *8*(6), 2575–2585. https://doi.org/10.29303/jppipa.v8i6.1896.

Jamal, F. (2019). Analisis kesulitan belajar siswa dalam mata pelajaran matematika pada materi peluang kelas XI IPA SMA Muhammadiyah Meulaboh Johan Pahlawan. *MAJU: Jurnal Ilmiah Pendidikan Matematika*, *1*(1). https://www.ejournal.stkipbbm.ac.id/index.php/mtk/article/view/232.

Kamid, K., Anwar, K., Iriani, D., & Nawahdani, A. M. (2021). Analysis of interest and process skills in learning mathematics. *Jurnal Riset Pendidikan Matematika*, *8*(2), 10 21831 8 2 42640. https://ejournal.undiksha.ac.id/index.php/JERE/article/view/37183.

Kamid, K., Iriani, D., & Nawahdani, A. M. (2022). Scientific Learning and Process Skills Mathematics: Comparison and Relationship. *JPI (Jurnal Pendidikan Indonesia*, *11*(2). https://doi.org/10.23887/jpiundiksha.v11i2.37158.

Kenedi, A. K., Helsa, Y., Ariani, Y., Zainil, M., & Hendri, S. (2019). Mathematical Connection of Elementary School Students to Solve Mathematical Problems. *Journal on Mathematics Education*, *10*(1), 69–80. https://doi.org/https://eric.ed.gov/?id=EJ1204804.

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative Data Analysis*. Sage Publication.

Mundiri, A., & Zahra, I. (2017). Implementasi metode STIFIn dalam meningkatkan kemampuan menghafal Al-Qur'an di rumah Qur'an STIFIn Paiton Probolinggo. *Jurnal Pendidikan Agama Islam (Journal of Islamic Education Studies*, *5*(2), 201–223. https://doi.org/10.15642/jpai.2017.5.2.201-223.

Natasya, N. (2019). Analisis Faktor Penyebab Kesulitan Belajar Matematika di Kelas IV Sekolah Dasar Negeri 004 Bangkinang Kota (Materi Pecahan. *Jurnal Riset Pembelajaran Matematika Sekolah*, *3*(2), 47–53. https://doi.org/10.21009/jrpms.032.06.

Nawahdani, A. M., Kurniawan, D. A., & Melisa, D. (2021). Analisis Model Project Based Learning Terhadap Keterampilan Proses Sains Peserta Didik Pada Mata Pelajaran Fisika. *Prosiding Seminar Nasional Matematika Dan Sains*, *3*(1), 348–354. https://doi.org/https://prosiding.biounwir.ac.id/article/view/185.

Novikasari, I. (2017). Hubungan Antara Prestasi Belajar Dan Tingkat Kecemasan Matematika Pada Mahasiswa Calon Guru SD/MI. *Jurnal Aksioma*, *5*(2). https://doi.org/10.24127/ajpm.v5i2.671.

Octavyanti, N. P. L., & Wulandari, I. G. A. A. (2021). Pengembangan Video Pembelajaran Berbasis Pendekatan Kontekstual Pada Mata Pelajaran Matematika Kelas IV SD. *Jurnal Edutech Undiksha*, *9*(1), 66–74. https://doi.org/10.23887/jeu.v9i1.32223.

Poniman, F., & Amalia, N. (2019). *A Grand Theory of STIFIn Personality: Basic Functions Theory Revisited*. https://mail.easychair.org/publications/preprint/QgPw.

Putridayani, I. B., & Chotimah, S. (2020). Analisis Kesulitan Belajar Siswa Dalam Pelajaran Matematika Pada Materi Peluang. *MAJU: Jurnal Ilmiah Pendidikan Matematika*, *7*(1). https://www.ejournal.stkipbbm.ac.id/index.php/mtk/article/view/426.

Ramalisa, Y. (2013). Proses Berpikir Kritis Siswa SMA Tipe Kepribadian Thinking dalam Memecahkan Masalah Matematika. *Edumatica*, *03*(01), 42–47. https://doi.org/10.22437/edumatica.v3i01.1407.

Roffiq, A., Qiram, I., & Rubiono, G. (2017). Media musik dan lagu pada proses pembelajaran. *JPDI (Jurnal Pendidikan Dasar Indonesia*, *2*(2), 35–40. https://doi.org/10.26737/jpdi.v2i2.330.

Rosanti, A., Tahir, M., & Maulyda, M. A. (2022). Analisis Kesulitan Belajar Matematika Materi Penjumlahan dan Pengurangan Pada Kelas II di SDN 3 Pringgajurang. *Jurnal Ilmiah Profesi Pendidikan*, *7*(3), 1490–1495. https://doi.org/10.29303/jipp.v7i3b.812.

Runtukkahu, J. T. (2014). *Pembelajaran Matematika Dasar bagi Anak Berkesulitan Belajar*. Pustaka Pelajar. http://library.uny.ac.id/sirkulasi/index.php?p=show_detail&id=49629&keywords=pembelajaran+matematika+dasar.

Safriani, W., Munzir, S., Duskri, M., & Maulidi, I. (2019). Analysis of Students' Errors on the Fraction

Calculation Operations Problem. *Al-Jabar: Jurnal Pendidikan Matematika*, *10*(2), 307–318. https://doi.org/10.24042/ajpm.v10i2.5224.

Sanjaya, R. (2020). *21 Refleksi Pembelajaran Daring di Masa Darurat*. SCU Knowledge Media.

Sholeh, A. H., Khasanatin, A. A., & Rena, S. (2022). Implementasi Metode STIFIN dalam Meningkatkan Karakter Islami Peserta Didik di Sekolah Alam. *Idrak: Journal of Islamic Education*, *4*(2). http://jurnal.stit-rh.ac.id/index.php/idrak/article/view/38.

Simanullang, P. (2022). Application of Introduction To Personality Psychology 5 Genetic Intelligence Through The Concept of Stifin Test. *ENGGANG: Jurnal Pendidikan, Bahasa, Sastra, Seni, Dan Budaya*, *3*(1), 100–109. https://doi.org/10.37304/enggang.v3i1.5214.

Supena, I., Darmuki, A., & Hariyadi, A. (2021). The Influence of 4C (Constructive, Critical, Creativity, Collaborative) Learning Model on Students' Learning Outcomes. *International Journal of Instruction*, *14*(3), 873–892. https://eric.ed.gov/?id=EJ1304598.

Syaputra, A. (2022). Implementasi Metode Random Sampling Pada Animasi Motion Grapich Herbisida Dan Fungisida. *Jurnal Sisfokom (Sistem Informasi Dan Komputer*, *11*(2), 142–147. https://doi.org/10.32736/sisfokom.v11i2.1370.

Timang, M., Nadeak, B., & Sihotang, H. (2021). the Influence of the Principal'S Managerial Ability, Training and Spiritual Intelligence on Teacher Performance At Smpn 1 Rantepao. *International Journal of Research-GRANTHAALAYAH*, *9*(1), 248–256. http://repository.uki.ac.id/4126/.

Unaenah, E., Siregar, E. R., Nurjamilah, P., Ramadhanty, S., & Sarah, S. (2022). Analisis Kesulitan Siswa pada Pembahasan Materi Pengelolaan Data Kelas VI SDN Kalideres 06 Pagi. *ARZUSIN*, *2*(4), 332–342. https://doi.org/10.58578/arzusin.v2i4.452.

Utari, D. R., Wardana, M. Y. S., & Damayani, A. T. (2019). Analisis kesulitan belajar matematika dalam menyelesaikan soal cerita. *Jurnal Ilmiah Sekolah Dasar*, *3*(4), 534–540. https://doi.org/10.23887/jisd.v3i4.22311.

Witkin, H. A., Moore, C. A., Goodenough, D. R., & Cox, P. W. (1977). Field-dependent and field-independent cognitive styles and their educational implications. *Review of Educational Research*, *47*(1), 1–64. https://journals.sagepub.com/doi/abs/10.3102/00346543047001001?journalCode=rera.

Yuniawardani, V., & Mawardi. (2018). Peningkatan Hasil Belajar Pada Pembelajaran Matematika Dengan Model Problem Based Learning Kelas IV SD. *Jurnal Riset Teknologi Dan Inovasi Pendidikan*, *1*(2), 24–32. https://doi.org/10.31764/justek.v1i1.416.

Yusanto, Y. (2020). Ragam Pendekatan Penelitian Kualitatif. *Journal of Scientific Communication (Jsc*, *1*(1). https://doi.org/10.31506/jsc.v1i1.7764.