**BUKTI KORESPONDENSI**
**ARTIKEL JURNAL INTERNASIONAL BEREPUTASI**

| | | |
|---|---|---|
| Judul artikel | : | Instructional strategy model based on reciprocal teaching model (ISM-RTM): Case study in inclusive classrooms in higher education |
| Jurnal | : | Kasetsart Journal of Social Sciences 43 (2022) 293–302 |
| Penulis | : | |

| No | Perihal | Tanggal |
|---|---|---|
| 1 | Bukti konfirmasi submit artikel dan artikel yang disubmit | 1 Maret 2021 |
| 2 | Bukti konfirmasi koreksi artikel dan resubmit artikel | 18 Maret 2021 |
| 3 | Bukti konfirmasi revisi pertama artikel dari Editor dan Reviewer | 25 April 2021 |
| 4 | Bukti konfirmasi revisi pertama artikel dan resubmit artikel revisi | 5 Mei 2021 |
| 5 | Bukti konfirmasi revisi kedua artikel dari Editor | 20 Mei 2021 |
| 6 | Bukti konfirmasi revisi kedua artikel dan resubmit artikel revisi | 21 Mei 2021 |
| 7 | Bukti konfirmasi revisi ketiga artikel dari Editor | 2 Juni 2021 |
| 8 | Bukti konformasi revisi ketiga artikel dan resubmit artikel revisi | 3 Juni 2021 |
| 9 | Bukti konfirmasi keputusan dari Editor (accepted) | 13 Juni 2021 |
| 10 | Bukti konfirmasi revisi dari Copyeditor | 30 Agustus 2021 |

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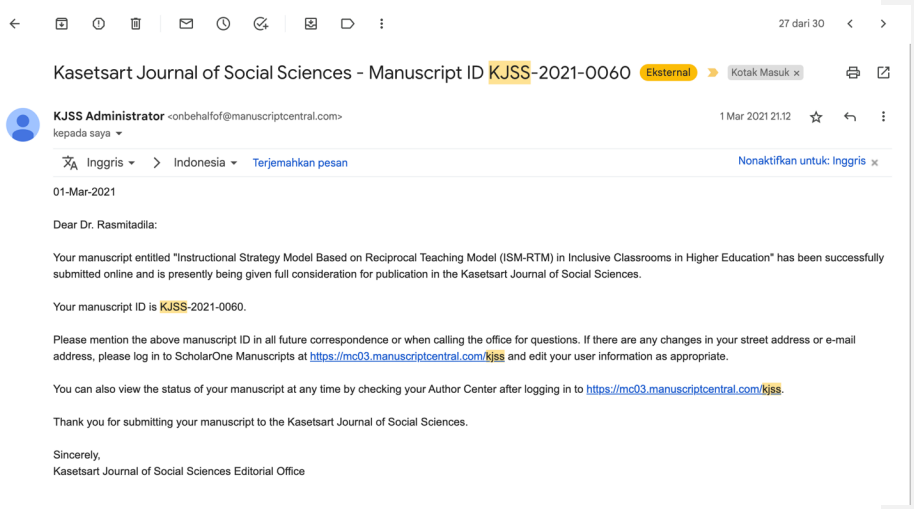

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# Instructional Strategy Model Based on Reciprocal Teaching Model (ISM-RTM) in Inclusive Classrooms in Higher Education



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|---|---|
| Journal: | *Kasetsart Journal of Social Sciences* |
| Manuscript ID | KJSS-2021-0060 |
| Manuscript Type: | Research Article |
| Keywords: | instructional strategy, reciprocal teaching, inclusive classroom, higher education |
| Research Area: | Education |
| | |







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# Instructional Strategy Model Based on Reciprocal Teaching Model (ISM-RTM) in Inclusive Classrooms in Higher Education

Instructional strategies in inclusive classrooms in higher education have not become an essential concern for lecturers who teach in inclusive classrooms. During this time, instruction has not accommodated all students' needs and competencies with various characteristics and learning styles. This research aims to identify students' opinions about implementing the instructional strategy model based on the reciprocal teaching model (ISM-RTM) in inclusive classrooms in higher education. Data were collected using classroom observations, face-to-face interviews, and documentation on twenty-four teacher students, consisting of twenty-two regular students (RS) and two students with special needs (SSN). The study results revealed that the ISM-RTM could achieve competency, namely, develop emotional skills, cognitive skills, and social skills in all students. In conclusion, the implementation of ISM-RTM was suitable for instruction in inclusive classrooms with the different characteristics, learning styles, and specificity of students in higher education

*Keywords:* instructional strategy, :reciprocal teaching model, :inclusive classroom, :higher education

## Introduction

Instruction in inclusive classrooms in higher education determines the competencies that all students will obtain, including special needs students (SSN). The competencies that all students will possess will largely determine students' success when entering the workforce (Patrick, Worthen, & Frost, 2018). Learning must involve communication, collaboration, innovation, and critical thinking to fulfill all the competencies needed of worked properly. Lecturers must design instruction that can accommodate all students' needs with different

characteristics, strengths, and different learning styles to fulfill all the skills students must possess (Ungar, Margaliot, Grobgeld, & Leshem, 2018).

To achieve instructional objectives that can meet the needs and competencies, the lecturer must design instructional strategies that can accommodate students' characteristics. Lecturers must create instructional strategies that can involve activeness, collaboration, and respect for all the limitations and weaknesses of all students (Sayeski, 2009; Buli-Holmberg & Jeyaprathaban, 2016). For the instructional strategy to be compatible with inclusive classrooms' characteristics, the lecturer must understand all students' characteristics, learning styles, weaknesses, and strengths. This is so that we can achieve all student competencies following instructional objectives.

But the fact is, there are still many lecturers who do not understand, plan and implement learning or instructional strategies that are friendly and follow the characteristics of inclusive classrooms. Various problems faced by lecturers in inclusive classrooms in higher education are still limited to the fulfillment of subject matter, without regard to the real instructional objectives. Lecturers do not understand students' characteristics, especially ABN, and continue using one-way instructional methods with the lecturer as a learning center. The impact is that not all competencies that students should obtain can be optimally accommodated. For this reason, instructional strategies should be an essential concern for lecturers before carrying out learning to achieve instructional objectives following predetermined.

One instructional strategy that can develop student skills in inclusive classrooms is an instructional strategy model based on the reciprocal teaching model (ISM-RTM) (Mitchell, 2008). The ISM-RTM is a model that can maximize student competency in learning activities for all students, including students with special needs. The ISM-RTM is a set of learning plans that involve students in developing cognitive aspects influenced by interactions with

people who have extensive knowledge, such as experts, educators, parents, and peers who encourage students to have more expertise be more competent. The ISM-RTM involves all class members learning from each other. Lecturers can facilitate learning by grouping students in groups consisting of students with special needs and regular students, so they teach one another. The purpose of the ISM-RTM is to provide reading or cognitive understanding, provide learning experiences, and improve the affective aspects of mutual respect and empathy between students to achieve learning targets following the lecturer's goals (Mitchell, 2008).

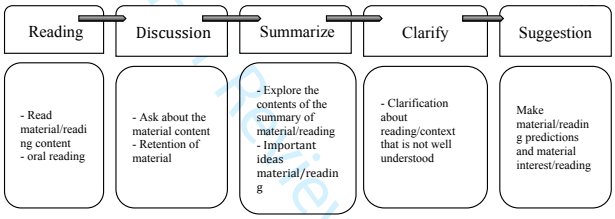


**Figure 1** Reciprocal Teaching Model

The purpose of this study is to explore student opinions about the competencies of implementation of the ISM-RTM in inclusive classrooms in higher education.

**Methods**

This study uses a qualitative approach to identify student opinions about the ISM-RTM in inclusive classrooms in higher educations. A qualitative approach explores people's opinions or thoughts more deeply about the topic being studied (Khotari, 2004).

***Participants***

Participants in this study came from one of the inclusive classrooms in the elementary school curriculum development course at one of the private institutions of higher education in West Java, Indonesia. The students involved were 5th-semester, with a total of twenty-four

(N=24) students consisting of twenty-two female and two male. The number of SSN in this classroom was two in the cerebral palsy category, and another was categorized as a slow learner.

Characteristics of a student with cerebral palsy in this class were an abnormality in one of the arms and fingers that could not be moved, so there was a limited movement in the right-hand area. While slow learner students with characteristics have low learning motivation, low learning outcomes, and weak interaction and communication, such was the case with the slow learner student in this study. Lecturers involved in learning were female lecturers with teaching experience for seven years and had competence in inclusive classroom learning.

## *Material and Methods*

The research was conducted in one of the private universities that openly accept all students' characteristics, both RS and non-RS. Some types of SSNs who have been accepted are slow learners, cerebral palsy, ADHD, learning difficulties, bipolar, limited vision (low vision). This private university is one of the be universities in West Java's province with the application of Islamic Tauhid (Monotheism), which provides opportunity and justice for every student to get an education without exception.

Classrooms are set according to class categories that have SSNs. Arrangement of physical facilities such as chairs, tables, or other learning tools illustrates the academic atmosphere that provides comfort for all students to develop all their potential, including SSNs. Instruction is carried out inside and outside the classroom with various instructional methods such as observation, discussion, and practice.

During this study, the course used was the elementary school's curriculum development, with five meetings, with each meeting consisting of 1.5 hours to 2 hours of face-to-face learning. Instructional materials included the curriculum's basic concepts, curriculum development models. In addition to regular learning needs, for research needs, lecturers created ISM-RTM. Table 1 below is an example of an ISM-RTM:

**Table 1** An example of Implementation of ISM-RTM

| No | Material / Topic of learning | RTM | Steps / Learning Sequence Learning | Method | Media | Materials | Assessment | Time allocation |
|---|---|---|---|---|---|---|---|---|
| 1 | The basic concept of curriculum | | | | | | | |
| | | | **Initial instructional activities** | | | | | |
| | | Reading | a. Lecturers provide reading material or references that students must read with their respective groups.<br>b. Each group found a problem that occurred following the topic of the | Exercise<br>Discussion | Infocus<br>Powerpoint | e-book<br>journal | Discussion rubric | 20 minutes |
| | | | **Main Instructional Activities** | | | | | |
| | | Discussion | a. The lecturer asks each group to divide their group members between groups to become expert groups.<br>b. Lecturers created small discussion groups with the same issue as other groups in expert groups.<br>c. Every group member who has the same topic discusses the topic regarding a problem. | Jigsaw<br>Discussion | Infocus<br>Powerpoint | e-book<br>journal | discussion rubric | 20 minutes |
| | | Summarize | a. Each group member returns to his initial group.<br>b. Each origin group explains each topic from the expert group.<br>c. Each origin group presents the topics that are considered the most important to be displayed. | Jigsaw<br>Discussion | Infocus<br>Powerpoint | Journal<br>and e-book | Rubric | 35 minutes |
| | | Clarify | a. Each group discusses, and the lecturer allows each group to argue with each other and ask questions. | Discussion | Infocus<br>Powerpoint | Journal<br>e-book | - | 25 minutes |
| | | | **Closing Activities** | | | | | |
| | | Suggestion<br>Lecturer Reflection on instruction | a. The lecturer explains the topic that each group still debates.<br>b. Lecturer makes a conclusion<br>The advantages of today's learning are that all students, including SSN , actively discussed and gave opinions. Each group leader provide equal opportunity for group members to share their opinions. Each group could already explain the purpose of the topic being studied.<br>Weaknesses: There are still students who are not confident when presenting or speaking in front of the class, including SSN, so they must practice often.<br>For future efforts, SSN must be given a "bigger" portion so that their self-confidence is higher and their motivation for learning will be better. | Expository | - | | - | 15 minutes |

### *Data Collection*

Data collection was done through several data sources, namely classroom observation, interviews, and documentation. Observations were made on the learning process using the

ISM-RTM from the beginning of instruction to instruction. Observations were made to document the instructional process between lecturers and students and students and students. The instrument used in the observation was an observation guide related to instruction using the ISM-RTM. The interview was conducted with a semi-structured face-to-face session, which had been designed to identify SNSs opinions. The questions provided consisted of twelve open questions to get more in-depth data. Two experts validated interview questions with instructional design and inclusive education expertise, which upon revisions were made according to the expert's direction.

The interview stage was conducted for three days, with ten people every day, with an average of 3-4 hours. Primary data was collected in the form of video and audio recordings, especially the learning process based on ISM-RTM. All learning activities were recorded using a video camera and voice message. One camera was always in front of the class, while the other camera followed the lecturer and student activities when interacting. There were fourteen observation activities with 1.5-2 hours of learning. Researchers only chose five observations as data to be analyzed because the ISM-RTM had been implemented well. The results of these recordings are transcripts to be used as a more detailed data analysis. Transcript results and interview results were analyzed using qualitative data analysis to obtain further results.

***Data Analysis***

Data analysis was performed using a qualitative analysis model (Spradley, 2016; Jamaris & Hartati, 2017) consisting of three steps, namely: (1) thematic analysis of all participants, observing learning activities from the beginning of learning to the end of learning both between teacher and student, as well as students and students, making field notes, coding, and interviewing students; (2) within-participants thematic analysis, identifying common themes from each learning activity; (3) cross participant analysis,

identifying common themes among participants. The final step in data analysis was to produce a cultural theme to implement the ISM-RTM in inclusive classrooms in higher educations. Table 2 describes the process used in the results of data analysis:

**Table 2** Qualitative data analysis

| Included Term | Semantic Relation | Cover Term |
|---|---|---|
| -Increase the desire to learn<br>-Increase learning motivation | Is part of | Emotional skill development |
| -Growing a culture of literacy<br>problem-solving skills<br>-Practicing-Adding new knowledge | Is part of | Cognitive skill development |
| -Improve collaboration<br>-Improve learning interactions | Is part of | Social skill development |

## Results and Discussion

The results of data analysis are illustrated in Figure 2 below:

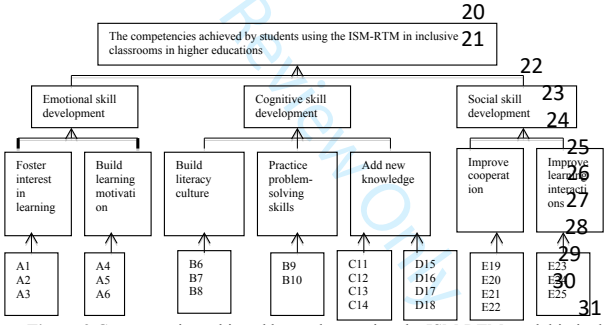


**Figure 2** Competencies achieved by students using the ISM-RTM model in inclusive classrooms

Notes:

A1: Lecturer invites students to sing along
A2: Lecturer makes a game in class
A3: Lecturer presents an example case
A3: Lecturer explains the benefits of the lesson
A4: Lecturer explains the relevance of the lesson to daily life
A5: Lecturer asks about problems that are relevant to the topic
B6: Lecturer gives the topic of reading
B7: The lecturer provides a chance for each student to make important points from reading
B8: Students focus on reading material that is not yet understood or that is important to discuss
B9: Students look for reading material that is the same as the topic to be addressed
B10: Lecturer makes opening questions for a case
C11: Lecturer provides opportunities to each group member to discuss the topic according to the reading

C12: Each group member presents reading material that is the focus and topic according to their task
C13: Each group member exchanges reading material with other group members with the same topic
C14: Each group member with the same topic and focus has a discussion
D15: Each group member returns to his group early to discuss
D16: Each group member provides opinions and solutions to the topic in the form of a problem
D17: The lecturer allows each group to present the problem according to the topic
D18: The lecturer gives clarification and understanding to all students
E19: Students work and study together in a group
E20: Regular students discuss with SSNs
E21: Regular students listen to SSNs' opinions
E22: All students play together in a group
E23: Each student gives an opinion in groups
E24: SSNs give an opinion in the group
E25: Each student is involved in a presentation (question and answer)

***Emotional skill development***

Emotional skills development is an ability that students will possess after undergoing learning, especially using the ISM-RTM. Emotional skills development helps foster student interest in learning and fosters a motivation to learn (Vongkulluksn, Matewos, Sinatra, & Marsh, 2018; Foster, 2019). Students' positive and negative opinions towards emotional development give more positive impacts than negative impacts to develop development emotional competence better. The most challenging thing for a lecturer when teaching lecture material is to foster student interest in learning so that students want to learn the subject matter. This is related to the background of each different student. Not every student has the same learning ability and academic achievement. In inclusive classrooms, with differences and characteristics, a lecturer must invite all students to have a positive interest in learning (Pearson et al., 2019; Van der Bij, Geijsel, Garst, & Ten Dam, 2016).

The use of ISM-RTM through 5 stages of activity provides free space for lecturers to foster student interest in learning. Students are given activities that directly practice what will be learned without dictating or explaining at length and without knowing the material's substance. This is consistent with the opinion of SSN below:

"For me, it is challenging to start learning because of the limitations of my movements. Sometimes I am shy and not open enough to begin studying. But when a lecturer starts learning by giving an example of someone's success, I become interested in learning".

The use of methods adapted to students' ability, encouragingly, will increase student interest in learning (Johnson, 2017). Besides, lecturers can explain learning by linking subject matter with a person's success story to learn the material. Moreover, such is the case with the characteristics of students who have different backgrounds, diversity, and learning styles. In the ISM-RTM, it is hoped that an exciting and enjoyable learning atmosphere can give students an idea of their learning goals and the benefits that will be achieved in the future.

All students are actively involved in every learning activity, including students with special needs. For RS, the use of the ISM-RTM can foster motivation to learn, such as the opinion below:

"It is important for me to have the motivation to learn so that I know what I am learning and what the benefits of the lesson are. My lecturer has given a concrete example in a game that can motivate me to complete the instructional objectives without me knowing before ".

Fostering motivation to learn for students aims to understand the subject matter's purpose to be learned. Of course, this is related to the interest in learning, which also grows at the beginning of learning. High motivation to learn will make it easier for students to achieve the stated lesson objectives before learning (Billingsley, Thomas, & Webber, 2018).

**Cognitive skills development**

Cognitive skills development is the ability to think from remembering to evaluation and creation, which is done by combining several ideas and ideas to solve problems. Student's opinions on developing cognitive skills provided consisted of more positive opinions than negative opinions. The use of the ISM-RTM model provides an opportunity for students to solve problems through reading activities, discussions, understanding the contents of the material read, and classifying the reading contents to conclude a particular topic. This ISM-RTM model's benefits can improve student literacy, problem-solving skills, and ability

to gain new knowledge, which has been an issue in previous lessons or even material that has never been discussed at previous meetings.

The use of the ISM-RTM has provided opportunities for every student to be able to practice problem-solving skills. Practicing problem-solving is very important for all students, including students with special needs (Karatas & Baki, 2017). It is hoped that this exercise is a positive step when they work at an institution after college. Students are expected to provide solutions to problems that occur at work as part of problem-solving. This is related to SSN's opinion:

"I am ashamed to express opinions in-group members, but now I am given the opportunity even encouraged by friends to be able to give opinions and ideas so that I feel the same as my friends when they express an opinion."

Both student opinions give an overview that the use of the ISM-RTM provides an opportunity for every student to be active, express opinions and ideas related to problems or questions that must be solved together. Equal opportunity without discrimination and fairness for each group member in expressing opinions can practice problem-solving skills more clearly (Siegel-Hawley & Frankenberg, 2012).

Each student can express opinions or ideas that are processed from various sources to be discussed together in a group forum. Reading activities and expressing their opinions are felt by students to provide many benefits (Rogers & Ardoin, 2018). Among other things, add insight into knowledge, understand the renewability of the source of knowledge from books, journals, and opinions. And can solve problems faced by students related to the subject matter. This benefit can be illustrated by one of the following regular students:

"I am lazy to read, but with the learning process of this RTM model, I have to read, and it helps me to be diligent in reading. This greatly affects my reading activity. "

The ISM-RTM provides new knowledge from the subject matter being studied and trains problem solving and critical thinking. Through reading activities at the beginning of instruction, students must understand the material, process, and produce opinions following the theory and dynamics of the development of developing science (Molotja & Themane, 2018).

**Social skills development**

Social skills describe social interaction both between lecturers and students and between students and students. Student's opinions about developing social skills provided consisted of more positive opinions than negative opinions. Social skills describe social interaction both between lecturers and students and between students and students. Besides, good cooperation between lecturers and students and students and students will improve social skills (Doyle, 2012).

The ISM-RTM provides opportunities for each student to understand the topic being studied through discussion, question and answer, and debate activities. Through the ISM-RTM, starting from the beginning of learning, lecturers have designed learning so that activities are carried out in groups. The information obtained by each group member varies and complements each other.

Some positive opinions of this collaboration, according to students, can hone one another's empathy, mutual respect for opinions and increase learning activity (Elfrida Yanti Siregar et al., 2019). In-group activities, selfishness can usually be reduced because there is mutual respect. Even such, selfish feelings of acceptance of opinions are often seen in discussion activities, especially for regular students. In addition to positive opinions, there are negative opinions from collaborative activities carried out by students, such as if they do not agree or disagree with SSNs; it is not uncommon for SSNs to get bullied, especially in the

form of verbal expression. This feeling of getting bullied remains when SSNs attend group discussion forums. This opinion can be seen in the opinion of SSNs below:

> "I was a bit worried when my discussion and opinion were not considered. I am afraid of getting bullied by other students. This is because several times, I've felt it ".

The ISM-RTM can train this sense of cooperation through the stages of the learning model. Like the discussion stage, summarize and clarify stages, which provide equal opportunities for each group member to express their opinions. Of course, supervision from the lecturer is required to proceed according to the stages and achievements key in implementing ISM-RTM.

Every step in the ISM-RTM provides opportunities between lecturers and students and students and students in all directions of learning interactions. The interaction of learning in inclusive classrooms is the key to success in learning. Without interaction, lecturers find it difficult to know their achievement or understanding of the material being studied.

In inclusive classrooms where students have diverse characteristics, learning interactions become unique (Rasmitadila, Samsudin, & Prasetyo, 2019). Especially the interaction between regular students and special needs students. The interaction between the two must often use different methods and requires patience for the interaction to take place. For regular students, they should assume that SSNs also get the same opportunities in learning, expressing opinions so that they still get equal rights as other students. The RS must understand the limitations and weaknesses of every SSN so that the attendance and opinions of SSNs are as important as the presence and opinions of the RS.

Differences in characteristics and the diversity of learning styles in inclusive classrooms should be a concern for lecturers. This greatly affects the achievement of all students and the class to understand the material being studied. Interaction in learning is

about teachers knowing about the achievement of learning outcomes and understanding what difficulties students face when studying (Harper, 2018).

**Conclusion and Recommendation**

Student opinions about the use of the ISM-RTM positively impacted emotional skills development, cognitive skills, and social skills for all students, including SSNs. Emotional skills development was evident by the growing interest in learning and increased motivation to learn. The development of cognitive skills was shown by the growth of a literacy culture, practice as a problem solver, and increased new knowledge for students related to the topic or material being studied. The development of social skills is shown by the formation of cooperation between students and the occurrence of interactions in learning activities.

The use of the ISM-RTM is very suitable for inclusive classrooms in higher education. The ISM-RTM can accommodate all the needs of students with various characteristics, learning styles, and strengths and weaknesses when implementing learning.

**Acknowledgments**

This work was supported by the Ministry of Research, Technology, and Higher Education of the Republic of Indonesia through Grant the Assistance with Special Learning Innovations in Higher Education, 2019.

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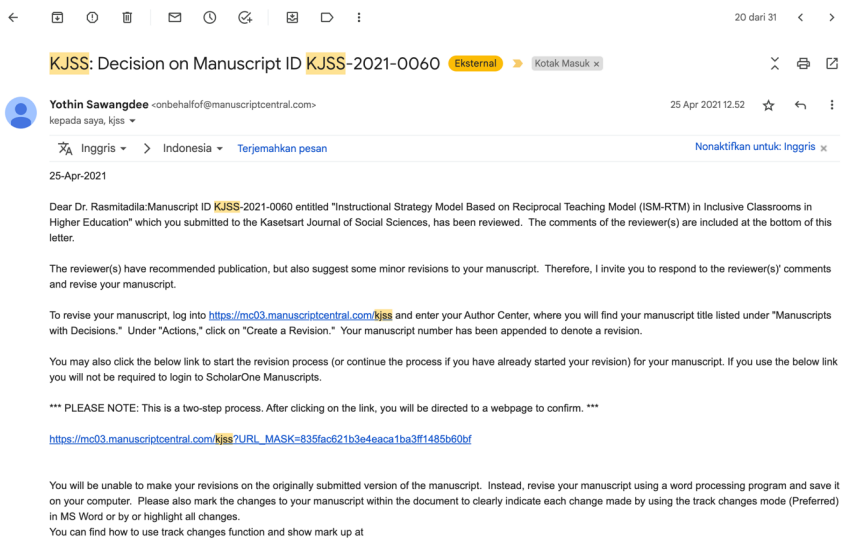
**2. Bukti konfirmasi revisi pertama artikel dari Editor dan Reviewer**
**(25 April 2021)**



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Sincerely,
Dr. Yothin Sawangdee
Section Editor
Kasetsart Journal of Social Sciences

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author
Revision based on comments on the manuscript!

Reviewer: 2

Comments to the Author
The results of the research can solve problems in the learning activities of students with special needs in higher education.

To make the manuscript perfect. Please revise the manuscript according to the suggestions that have been given

Section Editor's Comments to Author:

Section Editor: 1
Confidential Comments to the Author:
Please edit and revise based on the commentation and suggestions from the peer.

2
3
4
5
6

**3. Bukti konfirmasi revisi pertama artikel dan resubmit artikel revisi**
**(5 Mei 2021)**

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**Review's Comment & Response Form on KJSS: KJSS-2021-0060**

| Reviewer | Reviewer's Comment | Respond to Reviewer |
|---|---|---|
| **1** | The title is still too general, it does not describe the content of the research. Is this a case study, survey or something? | The title has been revised in accordance with reviewer comments. (page 1) |
| | Previously, explain the methods used, what instruments were used, whether the instruments for regular students and special needs were the same or different, how the data were analyzed. Explain before this part! | This section has been revised and highlighted on page 1, namely the instruments used and how to analyze them (page 1) |
| | Where did this fact come from? Is it from literature studies or case studies or where? If from a literature study, add references, and if from case studies, clarify when and where. Please explain this part! | This section has been revised by adding it based on the literature and sources used (pages 2-3) |
| | Reinforce this section with references, why instructional strategies should be an essential concern for lecturers! | This section has been revised by adding it based on the literature and sources used (page 2, paragraph 2) |
| | Where is the explanation for this? Please explain the meaning of Figure 1! And, does this have a reference? | This section has been revised by adding the definition from Figure 1 (pages 3-4) |
| | In this section, the instruments must be created in sub-sections. The contents must explain what instruments are | The instrument has been created with sub-sections. The content of the subsection consists of the instruments |

| | | |
|---|---|---|
| | used for each data collection technique. Then what form were the 12 questions in this study and were used in what collection techniques? What instruments were used by the observer in this study? | used in observation and interviews. Revisions can be seen on page 7 |
| | What types, there are many types of qualitative research. | This section has been added as part of the case study (page 4) |
| | Explain whether all the participants ended up being interviewed or what! | In this section, it was previously explained that all students were interviewed (page 7) |
| | What instrument does this observer use? Save this section in a new subsection containing research instruments | The instrument used by the observer has been added to a sub-section of the instruments menu (page 7) |
| | Make an explanation for each image presented! | All pictures consisting of the steps in figure 2 have been described (page 9) |
| | Explain in steps (Reading, Discussion, Summarize, Clarify, or Suggestion) and what actions ISM-RTM can develop emotional skills! | This explanation has been explained on page 10 in the second paragraph |
| | Explain in steps (Reading, Discussion, Summarize, Clarify, or Suggestion) and what actions ISM-RTM can develop cognitive skills! | This explanation has been explained on page 9 in the fourth paragraph |
| | Explain in steps (Reading, Discussion, Summarize, Clarify, or Suggestion) and what actions ISM-RTM can develop social skills! | This explanation has been explained on page 12 in the third paragraph |
| **2** | Keywords should not be the same as the tittle | We think that the keywords used are the most important keywords so that the paper can be read by readers in general |
| | Describe in detail how this increase occurred in the research results | This section has been described in the discussion section (page 10 paragraph 4), so that the conclusion section provides a synthesis in accordance with the results |
| | Please explain in detail on the research results how this increase occurred | This section has been described in the discussion section (page 12 paragraph 2), so that the conclusion section provides a synthesis in accordance with the results |

**Other:**

We have revised the contents of the manuscript according to the comments of the two reviewers. We have highlighted each change to make it easier for reviewers to re-examine the

revised results. We hope that this revision can make the manuscript more perfect so that it will become a reference for other readers.

**Instructional Strategy Model Based on Reciprocal Teaching Model (ISM-RTM): Case Study in Inclusive Classrooms in Higher Education**

Instructional strategies in inclusive classrooms in higher education have not become an essential concern for lecturers who teach in inclusive classrooms. During this time, instruction has not accommodated all students' needs and competencies with various characteristics and learning styles. This research aims to identify students' opinions about implementing the instructional strategy model based on the reciprocal teaching model (ISM-RTM) in inclusive classrooms in higher education. Data were collected using classroom observations, and face-to-face interviews with 24 teacher students (22 females; 2 males), consisting of 22 regular students (RS) and 2 students with special needs (SSNs). Data analysis used a qualitative analysis model with three steps. The study results revealed that the ISM-RTM could achieve competency, namely, develop emotional skills, cognitive skills, and social skills in all students. In conclusion, the implementation of ISM-RTM was suitable for instruction in inclusive classrooms with the different characteristics, learning styles, and specificity of students in higher education

*Keywords:* instructional strategy,; reciprocal teaching,; inclusive classroom, ; higher education

## Introduction

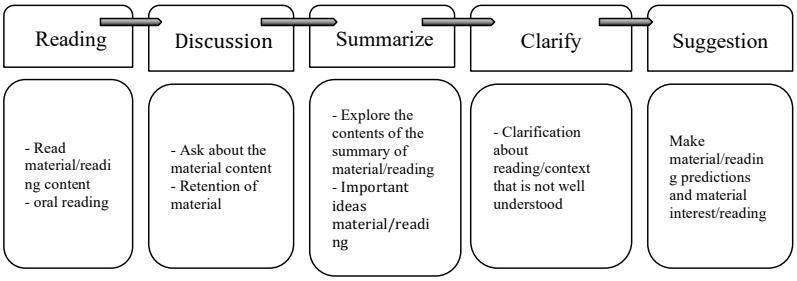
Instruction in inclusive classrooms in higher education determines the competencies that all students will obtain, including special needs students (SSN). The competencies that all students will possess will largely determine students' success when entering the workforce (Patrick, Worthen, & Frost, 2018). Learning must involve communication, collaboration, innovation, and critical thinking to fulfill all the competencies needed of worked properly. Lecturers must design instruction that can accommodate all students' needs with different characteristics, strengths, and different learning styles to fulfill all the skills students must possess (Ungar, Margaliot, Grobgeld, & Leshem, 2018).

To achieve instructional objectives that can meet the needs and competencies, the lecturer must design instructional strategies that can accommodate students' characteristics. Lecturers must create instructional strategies that can involve activeness, collaboration, and respect for all the limitations and weaknesses of all students (Sayeski, 2009; Buli-Holmberg & Jeyaprathaban, 2016). For the instructional strategy to be compatible with inclusive classrooms' characteristics, the lecturer must understand all students' characteristics, learning styles, weaknesses, and strengths. This is so that we can achieve all student competencies following instructional objectives (Gregory & Chapman, 2012).

But the fact is, there are still many lecturers who do not understand, plan and implement learning or instructional strategies that are friendly and follow the characteristics of inclusive classrooms. Various problems faced by lecturers in inclusive classrooms in higher education are still limited to the fulfillment of subject matter, without regard to the real instructional objectives (Molina et al., 2016; Ostrow Michel, 2020). Lecturers do not understand students' characteristics, especially SSN, and continue using one-way instructional methods with the lecturer as a learning center. The impact is that not all competencies that students should obtain can be optimally accommodated. For this reason, instructional strategies should be an essential

concern for lecturers before carrying out learning to achieve instructional objectives following predetermined (Ávila et al., 2019).

One instructional strategy that can develop student skills in inclusive classrooms is an instructional strategy model based on the reciprocal teaching model (ISM-RTM) (Mitchell, 2008). The ISM-RTM is a model that can maximize student competency in learning activities for all students, including students with special needs (Cárdenas & López-Pinzón, 2019; Palincsar, 2012); Brown & Palincsar, 1987), a set of learning plans that involve students in developing cognitive aspects influenced by interactions with people who have extensive knowledge, such as experts, educators, parents, and peers who encourage students to have more expertise be more competent (Clark, 2003; Rosenshine & Meister, 1994). Meanwhile, ISM-RTM involves all class members learning from each other. Lecturers can facilitate learning by grouping students in groups consisting of students with special needs and regular students, so




they teach one another. The purpose of the ISM-RTM is to provide reading or cognitive understanding, provide learning experiences, and improve the affective aspects of mutual respect and empathy between students to achieve learning targets following the lecturer's goals (Mitchell, 2008).

**Figure 1** Reciprocal Teaching Model (Mitchell, 2008)

ISM-RTM is an instructional model with 5 stages with each stage consisting of specific activities. First stage is reading that provides the opportunity for students to read material

(reading text) which is done by reading silently, or orally according to the student's abilities. The second stage is discussion that carried out by asking a number of questions about the reading content and providing opportunities for students to provide additional questions. This discussion aims to provide an in-depth understanding of the reading content, through interesting questions in order to obtain interesting information from the content / subject matter. The third stage is summarize that make statement sentences related to points or conclusions from the content/subject matter, through discussions that have been carried out. The fourth stage is clarify or confirm the content/material that has been studied if there are still statements that are doubtful or unclear. The fifth stage is suggestion that give suggestions and ask students to make a "prediction" of the next content / material that involves previous knowledge through symbols, pictures, graphics or issues that aim to make students have an interest in learning the next lesson content (Mitchell, 2008).

The purpose of this study is to explore student opinions about the competencies of implementation of the ISM-RTM in inclusive classrooms in higher education.

## Methods

This study used a qualitative approach with a case study to identify student opinions about the ISM-RTM in inclusive classrooms in higher educations. A qualitative approach explores people's opinions or thoughts more deeply about the topic being studied (Khotari, 2004).

### *Participants*

Participants in this study came from one of the inclusive classrooms in the elementary school curriculum development course at one of the private institutions of higher education in West Java, Indonesia. The students involved were 5th-semester, with a total of twenty-four (N=24) students consisting of twenty-two females and two males with an age range of 18-19

years old. The number of SSN (2 males) in this classroom was two in the cerebral palsy category, and another was categorized as a slow learner.

Characteristics of a student with cerebral palsy in this class were an abnormality in one of the arms and fingers that could not be moved, so there was a limited movement in the right-hand area. While slow learner students with characteristics have low learning motivation, low learning outcomes, and weak interaction and communication, such was the case with the slow learner student in this study. Lecturers involved in learning were female lecturers with teaching experience for seven years and had competence in inclusive classroom learning.

***Material and Methods***

The research was conducted in one of the private universities that openly accept all students' characteristics, both RS and SSN. Some types of SSNs who have been accepted are slow learners, cerebral palsy, ADHD, learning difficulties, bipolar, limited vision (low vision). This private university is one of the best universities in West Java's province with the application of Islamic Tauhid (Monotheism), which provides opportunity and justice for every student to get an education without exception.

Classrooms are set according to class categories that have SSNs. Arrangement of physical facilities such as chairs, tables, or other learning tools illustrates the academic atmosphere that provides comfort for all students to develop all their potential, including SSNs. Instruction is carried out inside and outside the classroom with various instructional methods such as observation, discussion, and practice.

During this study, the course used was the elementary school's curriculum development, with five meetings, with each meeting consisting of 1.5 hours to 2 hours of face-to-face learning. Instructional materials included the curriculum's basic concepts, curriculum development foundation, curriculum components, curriculum design, and curriculum

development models. In addition to regular learning needs, for research needs, lecturers created ISM-RTM. Table 1 below is an example of an ISM-RTM:

**Table 1** An example of Implementation of ISM-RTM

| No | Material / Topic of learning | RTM | Steps / Learning Sequence Learning | Method | Media | Materials | Assessment | Time allocation |
|---|---|---|---|---|---|---|---|---|
| 1 | The basic concept of curriculum | | | | | | | |
| **Initial instructional activities** | | | | | | | | |
| | | Reading | a. Lecturers provide reading material or references that students must read with their respective groups.<br>b. Each group found a problem that occurred following the topic of the | Exercise Discussion | Infocus Powerpoint | e-book journal | Discussion rubric | 20 minutes |
| **Main Instructional Activities** | | | | | | | | |
| | | Discussion | a. The lecturer asks each group to divide their group members between choosing one topic to focus on.<br>b. Lecturers created small discussion groups with the same issue as other groups or expert groups.<br>c. Every group member who has the same topic discusses the topic regarding a problem. | Jigsaw Discussion | Infocus Powerpoint | e-book journal | discussion rubric | 20 minutes |
| | | Summarize | a. Each group member returns to his homegroup.<br>b. Each origin group explains each topic from the expert group.<br>c. Each origin group presents the topics that are considered the most important to be displayed. | Jigsaw Discussion of | Infocus Powerpoint | Journal e-book | Rubric | 35 minutes |
| | | Clarify | a. Each group discusses, and the lecturer allows each group to argue with each other and give an opinion | Discussion on | Infocus Powerpoint | Journal e-book | - | 25 minutes |
| **Closing Activities** | | | | | | | | |
| | | Suggestion | a. The lecturer explains the topic that each group still debates.<br>b. Lecturer makes a conclusion | Expository | | | - | 15 minutes |
| | Lecturer Reflection on instruction:<br><br>The advantages of today's learning are that all students, including SSN , actively discussed and gave opinions. Each group leader provided equal opportunity for group members to be able to give their opinions. Each group could already explain the purpose of the topic being studied.<br>Weaknesses: There are still students who are not confident when presenting or speaking in front of the class, including SSN, so they must practice often.<br>For future efforts, SSN must be given a "bigger" portion so that their self-confidence is higher and their motivation for learning will be better. | | | | | | | |

***Data Collection***

Data collection was done through several data sources, namely classroom observation, interviews, and documentation. Observations were made on the learning process using the ISM-RTM from the beginning of instruction to instruction. Observations were made to

document the instructional process between lecturers and students; students and students. The instrument used in the observation was an observation guide related to instruction using the ISM-RTM. The interview was conducted with a semi-structured face-to-face session, which had been designed to identify SNSs opinions. The questions provided consisted of twelve open questions to get more in-depth data. Two experts validated interview questions with instructional design and inclusive education expertise, which upon revisions were made according to the expert's direction.

The interview stage was conducted for three days, with ten people of 24 students every day, with an average of 3-4 hours. Primary data was collected in the form of video and audio recordings, especially the learning process based on ISM-RTM. All learning activities were recorded using a video camera and voice message. One camera was always in front of the class, while the other camera followed the lecturer and student activities when interacting. There were fourteen observation activities with 1.5-2 hours of learning. Researchers only chose five observations as data to be analyzed because the ISM-RTM had been implemented well. The results of these recordings are transcripts to be used as a more detailed data analysis. Transcript results and interview results were analyzed using qualitative data analysis to obtain further results.

***Instruments***

The instruments used consisted of two types, namely observation and interview. The observation instrument consists of an observation guide based on the conceptual definition of the ISM-RTM. The guide focuses on 5 steps that have been designed in the form of learning content. Researchers must ensure that each step has been carried out by the lecturer (given a checklist). Meanwhile, the interview instrument consisted of twelve open questions, which were given to RSs and SSNs. The interview technique used was a semi-structured and open-ended interview type. So that researchers can explore every question and answer from each

student. The interview instruments consist of three general parts, namely students' understanding of ISM-RTM, the benefits of using ISM-RTM, and obstacles in implementing ISM-RTM in an inclusive classroom. Both RSs and SSNs are given the same questions, so that researchers can explore each student's answer, although in the end there are answers that vary depending on student characteristics.

***Data Analysis***

Data analysis was performed using a qualitative analysis model (Spradley, 2016; Jamaris & Hartati, 2017) consisting of three steps, namely: (1) thematic analysis of all participants, observing learning activities from the beginning of learning to the end of learning both between teacher and student, as well as students and students, making field notes, coding, and interviewing students; (2) within-participants thematic analysis, identifying common themes from each learning activity; (3) cross participant analysis, identifying common themes among participants. The final step in data analysis was to produce a cultural theme to implement the ISM-RTM in inclusive classrooms in higher educations. Table 2 describes the process used in the results of data analysis:

**Table 2** Qualitative data analysis

| Included Term | Semantic Relation | Cover Term |
|---|---|---|
| -Increase the desire to learn<br>-Increase learning motivation | Is part of | Emotional skill development |
| -Growing a culture of literacy<br>problem-solving skills<br>-Practicing-Adding new knowledge | Is part of | Cognitive skill development |
| -Improve collaboration<br>-Improve learning interactions | Is part of | Social skill development |

## Results and Discussion

The results of data analysis are illustrated in Figure 2 below:

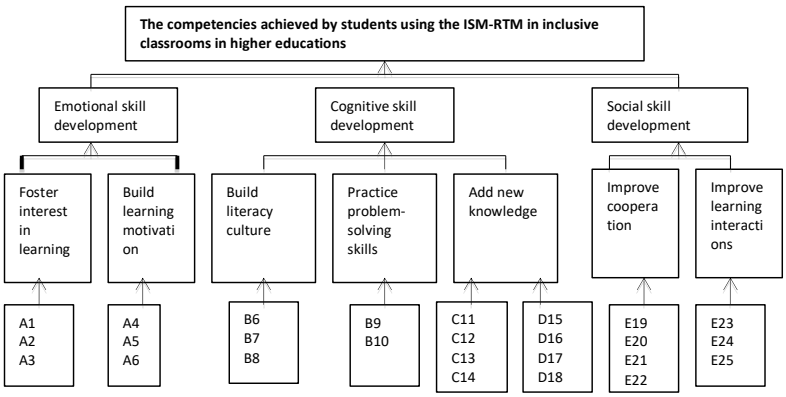



**Figure 2** Competencies achieved by students using the ISM-RTM model in inclusive classrooms

Notes:

A1: Lecturer invites students to sing along
A2: Lecturer makes a game in class
A3: Lecturer presents an example case
A3: Lecturer explains the benefits of the lesson
A4: Lecturer explains the relevance of the lesson to daily life
A5: Lecturer asks about problems that are relevant to the topic
B6: Lecturer gives the topic of reading
B7: The lecturer provides a chance for each student to make important points from reading
B8: Students focus on reading material that is not yet understood or that is important to discuss
B9: Students look for reading material that is the same as the topic to be addressed
B10: Lecturer makes opening questions for a case
C11: Lecturer provides opportunities to each group member to discuss the topic according to the reading
C12: Each group member presents reading material that is the focus and topic according to their task
C13: Each group member exchanges reading material with other group members with the same topic
C14: Each group member with the same topic and focus has a discussion
D15: Each group member returns to his group early to discuss
D16: Each group member provides opinions and solutions to the topic in the form of a problem
D17: The lecturer allows each group to present the problem according to the topic
D18: The lecturer gives clarification and understanding to all students
E19: Students work and study together in a group
E20: Regular students discuss with SSNs
E21: Regular students listen to SSNs' opinions
E22: All students play together in a group
E23: Each student gives an opinion in groups
E24: SSNs give an opinion in the group
E25: Each student is involved in a presentation (question and answer)

At the lowest level (A1-E25) are activities carried out at each learning step, which is obtained from observation activities (the thematic analytic process step). Furthermore, at the second level, it produces categories resulting from observations and interviews (within

participants). The third level results in combining several categories to produce specific themes (cross participants).

***Emotional skill development***

Emotional skills development is an ability that students will possess after undergoing learning, especially using the ISM-RTM. Emotional skills development helps foster student interest in learning and fosters a motivation to learn (Vongkulluksn, Matewos, Sinatra, & Marsh, 2018; Foster, 2019). Students' positive and negative opinions towards emotional development give more positive impacts than negative impacts to develop development emotional competence better. The most challenging thing for a lecturer when teaching lecture material is to foster student interest in learning so that students want to learn the subject matter. This is related to the background of each different student. Not every student has the same learning ability and academic achievement. In inclusive classrooms, with differences and characteristics, a lecturer must invite all students to have a positive interest in learning (Pearson et al., 2019; Van der Bij, Geijsel, Garst, & Ten Dam, 2016).

The use of ISM-RTM through 5 stages of activity provides free space for lecturers to foster student interest in learning. Students are given activities that directly practice what will be learned without dictating or explaining at length and without knowing the material's substance. This is consistent with the opinion of SSN below:

"For me, it is challenging to start learning because of the limitations of my movements. Sometimes I am shy and not open enough to begin studying. But when a lecturer starts learning by giving an example of someone's success, I become interested in learning".

The use of methods adapted to students' ability, encouragingly, will increase student interest in learning (Johnson, 2017). Besides, lecturers can explain learning by linking subject matter with a person's success story to learn the material. Moreover, such is the case with the characteristics of students who have different backgrounds, diversity, and learning styles. In

the ISM-RTM, it is hoped that an exciting and enjoyable learning atmosphere can give students an idea of their learning goals and the benefits that will be achieved in the future.

All students are actively involved in every learning activity, including students with special needs. For RS, the use of the ISM-RTM can foster motivation to learn, such as the opinion below:

> "It is important for me to have the motivation to learn so that I know what I am learning and what the benefits of the lesson are. My lecturer has given a concrete example in a game that can motivate me to complete the instructional objectives without me knowing before ".

Fostering motivation to learn for students aims to understand the subject matter's purpose to be learned. Of course, this is related to the interest in learning, which also grows at the beginning of learning. High motivation to learn will make it easier for students to achieve the stated lesson objectives before learning (Billingsley, Thomas, & Webber, 2018).

***Cognitive skills development***

Cognitive skills development is the ability to think from remembering to evaluation and creation, which is done by combining several ideas and ideas to solve problems. Student's opinions on developing cognitive skills provided consisted of more positive opinions than negative opinions. The use of the ISM-RTM model provides an opportunity for students to solve problems through reading activities, discussions, understanding the contents of the material read, and classifying the reading contents to conclude a particular topic. This ISM-RTM model's benefits can improve student literacy, problem-solving skills, and ability to gain new knowledge, which has been an issue in previous lessons or even material that has never been discussed at previous meetings.

The use of the ISM-RTM has provided opportunities for every student to be able to practice problem-solving skills. Practicing problem-solving is very important for all students,

including students with special needs (Karatas & Baki, 2017). It is hoped that this exercise is a positive step when they work at an institution after college. Students are expected to provide solutions to problems that occur at work as part of problem-solving. This is related to SSN's opinion:

> "I am ashamed to express opinions in-group members, but now I am given the opportunity even encouraged by friends to be able to give opinions and ideas so that I feel the same as my friends when they express an opinion."

Both student opinions give an overview that the use of the ISM-RTM provides an opportunity for every student to be active, express opinions and ideas related to problems or questions that must be solved together. Equal opportunity without discrimination and fairness for each group member in expressing opinions can practice problem-solving skills more clearly (Siegel-Hawley & Frankenberg, 2012).

Each student can express opinions or ideas that are processed from various sources to be discussed together in a group forum. Reading activities and expressing their opinions are felt by students to provide many benefits (Rogers & Ardoin, 2018). Among other things, add insight into knowledge, understand the renewability of the source of knowledge from books, journals, and opinions. And can solve problems faced by students related to the subject matter. This benefit can be illustrated by one of the following regular students:

> "I am lazy to read, but with the learning process of this RTM model, I have to read, and it helps me to be diligent in reading. This greatly affects my reading activity. "

The ISM-RTM provides new knowledge from the subject matter being studied and trains problem solving and critical thinking. Through reading activities at the beginning of instruction, students must understand the material, process, and produce opinions following the theory and dynamics of the development of developing science (Molotja & Themane, 2018).

***Social skills development***

Social skills describe social interaction both between lecturers and students and between students and students. Student's opinions about developing social skills provided consisted of more positive opinions than negative opinions. Social skills describe social interaction both between lecturers and students and between students and students. Besides, good cooperation between lecturers and students and students and students will improve social skills (Doyle, 2012).

The ISM-RTM provides opportunities for each student to understand the topic being studied through discussion, question and answer, and debate activities. Through the ISM-RTM, starting from the beginning of learning, lecturers have designed learning so that activities are carried out in groups. The information obtained by each group member varies and complements each other.

Some positive opinions of this collaboration, according to students, can hone one another's empathy, mutual respect for opinions and increase learning activity (Elfrida Yanti Siregar et al., 2019). In-group activities, selfishness can usually be reduced because there is mutual respect. Even such, selfish feelings of acceptance of opinions are often seen in discussion activities, especially for regular students. In addition to positive opinions, there are negative opinions from collaborative activities carried out by students, such as if they do not agree or disagree with SSNs; it is not uncommon for SSNs to get bullied, especially in the form of verbal expression. This feeling of getting bullied remains when SSNs attend group discussion forums. This opinion can be seen in the opinion of SSNs below:

"I was a bit worried when my discussion and opinion were not considered. I am afraid of getting bullied by other students. This is because several times, I've felt it ".

The ISM-RTM can train this sense of cooperation through the stages of the learning model. Like the discussion stage, summarize and clarify stages, which provide equal opportunities for each group member to express their opinions. Of course, supervision from

the lecturer is required to proceed according to the stages and achievements key in implementing ISM-RTM.

Every step in the ISM-RTM provides opportunities between lecturers and students and students and students in all directions of learning interactions. The interaction of learning in inclusive classrooms is the key to success in learning. Without interaction, lecturers find it difficult to know their achievement or understanding of the material being studied.

In inclusive classrooms where students have diverse characteristics, learning interactions become unique (Rasmitadila, Samsudin, & Prasetyo, 2019). Especially the interaction between regular students and special needs students. The interaction between the two must often use different methods and requires patience for the interaction to take place. For regular students, they should assume that SSNs also get the same opportunities in learning, expressing opinions so that they still get equal rights as other students. The RS must understand the limitations and weaknesses of every SSN so that the attendance and opinions of SSNs are as important as the presence and opinions of the RS.

Differences in characteristics and the diversity of learning styles in inclusive classrooms should be a concern for lecturers. This greatly affects the achievement of all students and the class to understand the material being studied. Interaction in learning is about teachers knowing about the achievement of learning outcomes and understanding what difficulties students face when studying (Harper, 2018).

**Conclusion and Recommendation**

Student opinions about the use of the ISM-RTM positively impacted emotional skills development, cognitive skills, and social skills for all students, including SSNs. Emotional skills development was evident by the growing interest in learning and increased motivation to learn. The development of cognitive skills was shown by the growth of a literacy culture, practice as a problem solver, and increased new knowledge for students related to the topic or

material being studied. The development of social skills is shown by the formation of cooperation between students and the occurrence of interactions in learning activities.

The use of the ISM-RTM is very suitable for inclusive classrooms in higher education. The ISM-RTM can accommodate all the needs of students with various characteristics, learning styles, and strengths and weaknesses when implementing learning.

**Acknowledgments**

This work was supported by the Ministry of Research, Technology, and Higher Education of the Republic of Indonesia through Grant the Assistance with Special Learning Innovations in Higher Education, 2019.

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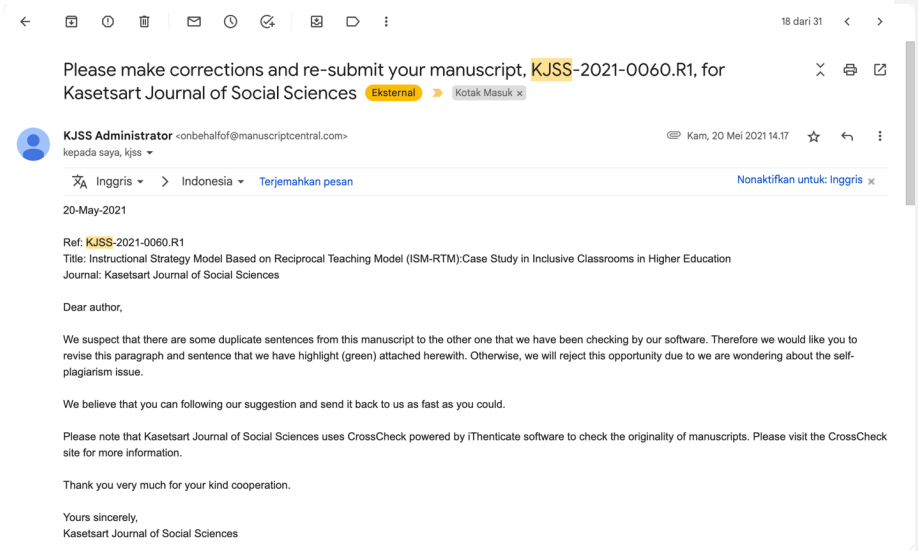

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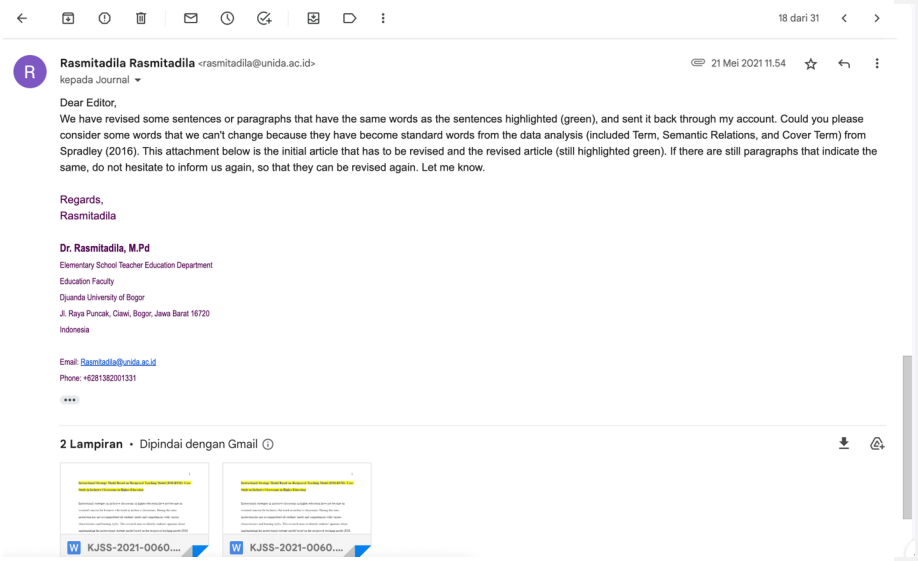

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# Instructional Strategy Model Based on Reciprocal Teaching Model (ISM-RTM): Case Study in Inclusive Classrooms in Higher Education

Instructional strategies in inclusive classrooms in higher education have not become an essential concern for lecturers who teach in inclusive classrooms. During this time, instruction has not accommodated all students' needs and competencies with various characteristics and learning styles. This research aims to identify students' opinions about implementing the instructional strategy model based on the reciprocal teaching model (ISM-RTM) in inclusive classrooms in higher education. Data were collected using classroom observations, and face-to-face interviews with 24 teacher students (22 females; 2 males), consisting of 22 regular students (RS) and 2 students with special needs (SSNs). Data analysis used a qualitative analysis model with three steps. The study results revealed that the ISM-RTM could achieve competency, namely, develop emotional skills, cognitive skills, and social skills in all students. In conclusion, the implementation of ISM-RTM was suitable for instruction in inclusive classrooms with the different characteristics, learning styles, and specificity of students in higher education

*Keywords:* instructional strategy,; reciprocal teaching,:inclusive classroom, :higher education

## Introduction

Instruction in inclusive classrooms in higher education determines the competencies that all students will obtain, including special needs students (SSN). The competencies that all students will possess will largely determine students' success when entering the workforce

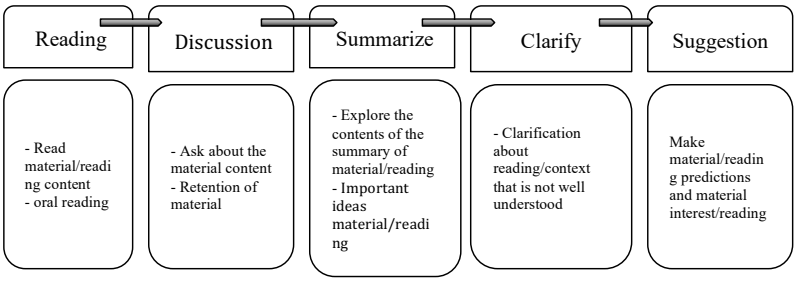
(Patrick, Worthen, & Frost, 2018). Learning must involve communication, collaboration, innovation, and critical thinking to fulfill all the competencies needed of worked properly. Lecturers must design instruction that can accommodate all students' needs with different characteristics, strengths, and different learning styles to fulfill all the skills students must possess (Ungar, Margaliot, Grobgeld, & Leshem, 2018).

To achieve instructional objectives that can meet the needs and competencies, the lecturer must design instructional strategies that can accommodate students' characteristics. Lecturers must create instructional strategies that can involve activeness, collaboration, and respect for all the limitations and weaknesses of all students (Sayeski, 2009; Buli-Holmberg & Jeyaprathaban, 2016). For the instructional strategy to be compatible with inclusive classrooms' characteristics, the lecturer must understand all students' characteristics, learning styles, weaknesses, and strengths. This is so that we can achieve all student competencies following instructional objectives (Gregory & Chapman, 2012).

But the fact is, there are still many lecturers who do not understand, plan and implement learning or instructional strategies that are friendly and follow the characteristics of inclusive classrooms. Various problems faced by lecturers in inclusive classrooms in higher education are still limited to the fulfillment of subject matter, without regard to the real instructional objectives (Molina et al., 2016; Ostrow Michel, 2020). Lecturers do not understand students' characteristics, especially SSN, and continue using one-way instructional methods with the lecturer as a learning center. The impact is that not all competencies that students should obtain can be optimally accommodated. For this reason, instructional strategies should be an essential concern for lecturers before carrying out learning to achieve instructional objectives following predetermined (Ávila et al., 2019).

One instructional strategy that can develop student skills in inclusive classrooms is an instructional strategy model based on the reciprocal teaching model (ISM-RTM) (Mitchell,

2008). The ISM-RTM is a model that can maximize student competency in learning activities for all students, including students with special needs (Cárdenas & López-Pinzón, 2019; Palincsar, 2012); Brown & Palincsar, 1987), a set of learning plans that involve students in developing cognitive aspects influenced by interactions with people who have extensive knowledge, such as experts, educators, parents, and peers who encourage students to have more expertise be more competent (Clark, 2003; Rosenshine & Meister, 1994). Meanwhile, ISM-RTM involves all class members learning from each other. Lecturers can facilitate learning by grouping students in groups consisting of students with special needs and regular students, so they teach one another. The purpose of the ISM-RTM is to provide reading or cognitive understanding, provide learning experiences, and improve the affective aspects of mutual




respect and empathy between students to achieve learning targets following the lecturer's goals (Mitchell, 2008).

**Figure 1** Reciprocal Teaching Model (Mitchell, 2008)

ISM-RTM is an instructional model with 5 stages with each stage consisting of specific activities. First stage is reading that provides the opportunity for students to read material (reading text) which is done by reading silently, or orally according to the student's abilities. The second stage is discussion that carried out by asking a number of questions about the reading content and providing opportunities for students to provide additional questions. This discussion aims to provide an in-depth understanding of the reading content, through

interesting questions in order to obtain interesting information from the content / subject matter. The third stage is summarize that make statement sentences related to points or conclusions from the content/subject matter, through discussions that have been carried out. The fourth stage is clarify or confirm the content/material that has been studied if there are still statements that are doubtful or unclear. The fifth stage is suggestion that give suggestions and ask students to make a "prediction" of the next content / material that involves previous knowledge through symbols, pictures, graphics or issues that aim to make students have an interest in learning the next lesson content (Mitchell, 2008).

The purpose of this study is to explore student opinions about the competencies of implementation of the ISM-RTM in inclusive classrooms in higher education.

**Methods**

This study used a qualitative approach with a case study to identify student opinions about the ISM-RTM in inclusive classrooms in higher educations. A qualitative approach explores people's opinions or thoughts more deeply about the topic being studied (Khotari, 2004).

***Participants***

Participants in this study came from one of the inclusive classrooms in the elementary school curriculum development course at one of the private institutions of higher education in West Java, Indonesia. The students involved were 5th-semester, with a total of twenty-four (N=24) students consisting of twenty-two females and two males with an age range of 18-19 years old. The number of SSN (2 males) in this classroom was two in the cerebral palsy category, and another was categorized as a slow learner.

Characteristics of a student with cerebral palsy in this class were an abnormality in one of the arms and fingers that could not be moved, so there was a limited movement in the right-hand area. While slow learner students with characteristics have low learning motivation, low

learning outcomes, and weak interaction and communication, such was the case with the slow learner student in this study. Lecturers involved in learning were female lecturers with teaching experience for seven years and had competence in inclusive classroom learning.

***Material and Methods***

The research was conducted in one of the private universities that openly accept all students' characteristics, both RS and SSN. Some types of SSNs who have been accepted are slow learners, cerebral palsy, ADHD, learning difficulties, bipolar, limited vision (low vision). This private university is one of the best universities in West Java's province with the application of Islamic Tauhid (Monotheism), which provides opportunity and justice for every student to get an education without exception.

Classrooms are set according to class categories that have SSNs. Arrangement of physical facilities such as chairs, tables, or other learning tools illustrates the academic atmosphere that provides comfort for all students to develop all their potential, including SSNs. Instruction is carried out inside and outside the classroom with various instructional methods such as observation, discussion, and practice.

During this study, the course used was the elementary school's curriculum development, with five meetings, with each meeting consisting of 1.5 hours to 2 hours of face-to-face learning. Instructional materials included the curriculum's basic concepts, curriculum development foundation, curriculum components, curriculum design, and curriculum development models. In addition to regular learning needs, for research needs, lecturers created ISM-RTM. Table 1 below is an example of an ISM-RTM:

**Table 1** An example of Implementation of ISM-RTM

| No | Material / Topic of learning | RTM | Steps / Learning Sequence Learning | Method | Media | Materials | Assessment | Time allocation |
|---|---|---|---|---|---|---|---|---|
| 1 | The basic concept of curriculum | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Initial instructional activities** | | | | | | | | |
| | | Reading | a. Lecturers provide reading material or references that students must read with their respective groups.<br>b. Each group found a problem that occurred following the topic of the | Exercise Discussion | Infocus Powerpoint | e-book journal | Discussion rubric | 20 minutes |
| **Main Instructional Activities** | | | | | | | | |
| | | Discussion | a. The lecturer asks each group to divide their group members between choosing one topic to focus on.<br>b. Lecturers created small discussion groups with the same issue as other groups or expert groups.<br>c. Every group member who has the same topic discusses the topic regarding a problem. | Jigsaw Discussion | Infocus Powerpoint | e-book journal | discussion rubric | 20 minutes |
| | | Summarize | a. Each group member returns to his homegroup.<br>b. Each origin group explains each topic from the expert group.<br>c. Each origin group presents the topics that are considered the most important to be displayed. | Jigsaw Discussion of | Infocus Powerpoint | Journal e-book | Rubric | 35 minutes |
| | | Clarify | a. Each group discusses, and the lecturer allows each group to argue with each other and give an opinion | Discussion on | Infocus Powerpoint | Journal e-book | - | 25 minutes |
| **Closing Activities** | | | | | | | | |
| | | Suggestion | a. The lecturer explains the topic that each group still debates.<br>b. Lecturer makes a conclusion | Expository | | | - | 15 minutes |
| | Lecturer Reflection on instruction:<br><br>The advantages of today's learning are that all students, including SSN , actively discussed and gave opinions. Each group leader provided equal opportunity for group members to be able to give their opinions. Each group could already explain the purpose of the topic being studied.<br>Weaknesses: There are still students who are not confident when presenting or speaking in front of the class, including SSN, so they must practice often.<br>For future efforts, SSN must be given a "bigger" portion so that their self-confidence is higher and their motivation for learning will be better. | | | | | | | |

***Data Collection***

Data collection was done through several data sources, namely classroom observation, interviews, and documentation. Observations were made on the learning process using the ISM-RTM from the beginning of instruction to instruction. Observations were made to document the instructional process between lecturers and students; students and students. The instrument used in the observation was an observation guide related to instruction using the

ISM-RTM. The interview was conducted with a semi-structured face-to-face session, which had been designed to identify SNSs opinions. The questions provided consisted of twelve open questions to get more in-depth data. Two experts validated interview questions with instructional design and inclusive education expertise, which upon revisions were made according to the expert's direction.

The interview stage was conducted for three days, with ten people of 24 students every day, with an average of 3-4 hours. Primary data was collected in the form of video and audio recordings, especially the learning process based on ISM-RTM. All learning activities were recorded using a video camera and voice message. One camera was always in front of the class, while the other camera followed the lecturer and student activities when interacting. There were fourteen observation activities with 1.5-2 hours of learning. Researchers only chose five observations as data to be analyzed because the ISM-RTM had been implemented well. The results of these recordings are transcripts to be used as a more detailed data analysis. Transcript results and interview results were analyzed using qualitative data analysis to obtain further results.

***Instruments***

The instruments used consisted of two types, namely observation and interview. The observation instrument consists of an observation guide based on the conceptual definition of the ISM-RTM. The guide focuses on 5 steps that have been designed in the form of learning content. Researchers must ensure that each step has been carried out by the lecturer (given a checklist). Meanwhile, the interview instrument consisted of twelve open questions, which were given to RSs and SSNs. The interview technique used was a semi-structured and open-ended interview type. So that researchers can explore every question and answer from each student. The interview instruments consist of three general parts, namely students' understanding of ISM-RTM, the benefits of using ISM-RTM, and obstacles in implementing

ISM-RTM in an inclusive classroom. Both RSs and SSNs are given the same questions, so that researchers can explore each student's answer, although in the end there are answers that vary depending on student characteristics.

***Data Analysis***

Data analysis was performed using a qualitative analysis model (Spradley, 2016; Jamaris & Hartati, 2017) consisting of three steps, namely: (1) thematic analysis of all participants, observing learning activities from the beginning of learning to the end of learning both between teacher and student, as well as students and students, making field notes, coding, and interviewing students; (2) within-participants thematic analysis, identifying common themes from each learning activity; (3) cross participant analysis, identifying common themes among participants. The final step in data analysis was to produce a cultural theme to implement the ISM-RTM in inclusive classrooms in higher educations. Table 2 describes the process used in the results of data analysis:

**Table 2** Qualitative data analysis

| Included Term | Semantic Relation | Cover Term |
|---|---|---|
| -Increase the desire to learn<br>-Increase learning motivation | Is part of | Emotional skill development |
| -Growing a culture of literacy problem-solving skills<br>-Practicing-Adding new knowledge | Is part of | Cognitive skill development |
| -Improve collaboration<br>-Improve learning interactions | Is part of | Social skill development |

## Results and Discussion

The results of data analysis are illustrated in Figure 2 below:

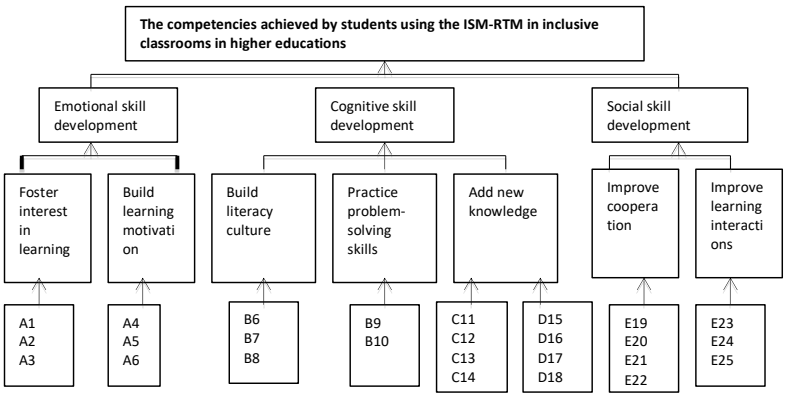



**Figure 2** Competencies achieved by students using the ISM-RTM model in inclusive classrooms

Notes:

A1: Lecturer invites students to sing along
A2: Lecturer makes a game in class
A3: Lecturer presents an example case
A3: Lecturer explains the benefits of the lesson
A4: Lecturer explains the relevance of the lesson to daily life
A5: Lecturer asks about problems that are relevant to the topic
B6: Lecturer gives the topic of reading
B7: The lecturer provides a chance for each student to make important points from reading
B8: Students focus on reading material that is not yet understood or that is important to discuss
B9: Students look for reading material that is the same as the topic to be addressed
B10: Lecturer makes opening questions for a case
C11: Lecturer provides opportunities to each group member to discuss the topic according to the reading
C12: Each group member presents reading material that is the focus and topic according to their task
C13: Each group member exchanges reading material with other group members with the same topic
C14: Each group member with the same topic and focus has a discussion
D15: Each group member returns to his group early to discuss
D16: Each group member provides opinions and solutions to the topic in the form of a problem
D17: The lecturer allows each group to present the problem according to the topic
D18: The lecturer gives clarification and understanding to all students
E19: Students work and study together in a group
E20: Regular students discuss with SSNs
E21: Regular students listen to SSNs' opinions
E22: All students play together in a group
E23: Each student gives an opinion in groups
E24: SSNs give an opinion in the group
E25: Each student is involved in a presentation (question and answer)

At the lowest level (A1-E25) are activities carried out at each learning step, which is obtained from observation activities (the thematic analytic process step). Furthermore, at the second level, it produces categories resulting from observations and interviews (within

participants). The third level results in combining several categories to produce specific themes (cross participants).

***Emotional skill development***

Emotional skills development is an ability that students will possess after undergoing learning, especially using the ISM-RTM. Emotional skills development helps foster student interest in learning and fosters a motivation to learn (Vongkulluksn, Matewos, Sinatra, & Marsh, 2018; Foster, 2019). Students' positive and negative opinions towards emotional development give more positive impacts than negative impacts to develop development emotional competence better. The most challenging thing for a lecturer when teaching lecture material is to foster student interest in learning so that students want to learn the subject matter. This is related to the background of each different student. Not every student has the same learning ability and academic achievement. In inclusive classrooms, with differences and characteristics, a lecturer must invite all students to have a positive interest in learning (Pearson et al., 2019; Van der Bij, Geijsel, Garst, & Ten Dam, 2016).

The use of ISM-RTM through 5 stages of activity provides free space for lecturers to foster student interest in learning. Students are given activities that directly practice what will be learned without dictating or explaining at length and without knowing the material's substance. This is consistent with the opinion of SSN below:

"For me, it is challenging to start learning because of the limitations of my movements. Sometimes I am shy and not open enough to begin studying. But when a lecturer starts learning by giving an example of someone's success, I become interested in learning".

The use of methods adapted to students' ability, encouragingly, will increase student interest in learning (Johnson, 2017). Besides, lecturers can explain learning by linking subject matter with a person's success story to learn the material. Moreover, such is the case with the characteristics of students who have different backgrounds, diversity, and learning styles. In

the ISM-RTM, it is hoped that an exciting and enjoyable learning atmosphere can give students an idea of their learning goals and the benefits that will be achieved in the future.

All students are actively involved in every learning activity, including students with special needs. For RS, the use of the ISM-RTM can foster motivation to learn, such as the opinion below:

> "It is important for me to have the motivation to learn so that I know what I am learning and what the benefits of the lesson are. My lecturer has given a concrete example in a game that can motivate me to complete the instructional objectives without me knowing before ".

Fostering motivation to learn for students aims to understand the subject matter's purpose to be learned. Of course, this is related to the interest in learning, which also grows at the beginning of learning. High motivation to learn will make it easier for students to achieve the stated lesson objectives before learning (Billingsley, Thomas, & Webber, 2018).

***Cognitive skills development***

Cognitive skills development is the ability to think from remembering to evaluation and creation, which is done by combining several ideas and ideas to solve problems. Student's opinions on developing cognitive skills provided consisted of more positive opinions than negative opinions. The use of the ISM-RTM model provides an opportunity for students to solve problems through reading activities, discussions, understanding the contents of the material read, and classifying the reading contents to conclude a particular topic. This ISM-RTM model's benefits can improve student literacy, problem-solving skills, and ability to gain new knowledge, which has been an issue in previous lessons or even material that has never been discussed at previous meetings.

The use of the ISM-RTM has provided opportunities for every student to be able to practice problem-solving skills. Practicing problem-solving is very important for all students,

including students with special needs (Karatas & Baki, 2017). It is hoped that this exercise is a positive step when they work at an institution after college. Students are expected to provide solutions to problems that occur at work as part of problem-solving. This is related to SSN's opinion:

> "I am ashamed to express opinions in-group members, but now I am given the opportunity even encouraged by friends to be able to give opinions and ideas so that I feel the same as my friends when they express an opinion."

Both student opinions give an overview that the use of the ISM-RTM provides an opportunity for every student to be active, express opinions and ideas related to problems or questions that must be solved together. Equal opportunity without discrimination and fairness for each group member in expressing opinions can practice problem-solving skills more clearly (Siegel-Hawley & Frankenberg, 2012).

Each student can express opinions or ideas that are processed from various sources to be discussed together in a group forum. Reading activities and expressing their opinions are felt by students to provide many benefits (Rogers & Ardoin, 2018). Among other things, add insight into knowledge, understand the renewability of the source of knowledge from books, journals, and opinions. And can solve problems faced by students related to the subject matter. This benefit can be illustrated by one of the following regular students:

> "I am lazy to read, but with the learning process of this RTM model, I have to read, and it helps me to be diligent in reading. This greatly affects my reading activity. "

The ISM-RTM provides new knowledge from the subject matter being studied and trains problem solving and critical thinking. Through reading activities at the beginning of instruction, students must understand the material, process, and produce opinions following the theory and dynamics of the development of developing science (Molotja & Themane, 2018).

***Social skills development***

Social skills describe social interaction both between lecturers and students and between students and students. Student's opinions about developing social skills provided consisted of more positive opinions than negative opinions. Social skills describe social interaction both between lecturers and students and between students and students. Besides, good cooperation between lecturers and students and students and students will improve social skills (Doyle, 2012).

The ISM-RTM provides opportunities for each student to understand the topic being studied through discussion, question and answer, and debate activities. Through the ISM-RTM, starting from the beginning of learning, lecturers have designed learning so that activities are carried out in groups. The information obtained by each group member varies and complements each other.

Some positive opinions of this collaboration, according to students, can hone one another's empathy, mutual respect for opinions and increase learning activity (Elfrida Yanti Siregar et al., 2019). In-group activities, selfishness can usually be reduced because there is mutual respect. Even such, selfish feelings of acceptance of opinions are often seen in discussion activities, especially for regular students. In addition to positive opinions, there are negative opinions from collaborative activities carried out by students, such as if they do not agree or disagree with SSNs; it is not uncommon for SSNs to get bullied, especially in the form of verbal expression. This feeling of getting bullied remains when SSNs attend group discussion forums. This opinion can be seen in the opinion of SSNs below:

"I was a bit worried when my discussion and opinion were not considered. I am afraid of getting bullied by other students. This is because several times, I've felt it ".

The ISM-RTM can train this sense of cooperation through the stages of the learning model. Like the discussion stage, summarize and clarify stages, which provide equal opportunities for each group member to express their opinions. Of course, supervision from

the lecturer is required to proceed according to the stages and achievements key in implementing ISM-RTM.

Every step in the ISM-RTM provides opportunities between lecturers and students and students and students in all directions of learning interactions. The interaction of learning in inclusive classrooms is the key to success in learning. Without interaction, lecturers find it difficult to know their achievement or understanding of the material being studied.

In inclusive classrooms where students have diverse characteristics, learning interactions become unique (Rasmitadila, Samsudin, & Prasetyo, 2019). Especially the interaction between regular students and special needs students. The interaction between the two must often use different methods and requires patience for the interaction to take place. For regular students, they should assume that SSNs also get the same opportunities in learning, expressing opinions so that they still get equal rights as other students. The RS must understand the limitations and weaknesses of every SSN so that the attendance and opinions of SSNs are as important as the presence and opinions of the RS.

Differences in characteristics and the diversity of learning styles in inclusive classrooms should be a concern for lecturers. This greatly affects the achievement of all students and the class to understand the material being studied. Interaction in learning is about teachers knowing about the achievement of learning outcomes and understanding what difficulties students face when studying (Harper, 2018).

**Conclusion and Recommendation**

Student opinions about the use of the ISM-RTM positively impacted emotional skills development, cognitive skills, and social skills for all students, including SSNs. Emotional skills development was evident by the growing interest in learning and increased motivation to learn. The development of cognitive skills was shown by the growth of a literacy culture, practice as a problem solver, and increased new knowledge for students related to the topic or

material being studied. The development of social skills is shown by the formation of cooperation between students and the occurrence of interactions in learning activities.

The use of the ISM-RTM is very suitable for inclusive classrooms in higher education. The ISM-RTM can accommodate all the needs of students with various characteristics, learning styles, and strengths and weaknesses when implementing learning.

**Acknowledgments**

This work was supported by the Ministry of Research, Technology, and Higher Education of the Republic of Indonesia through Grant the Assistance with Special Learning Innovations in Higher Education, 2019.

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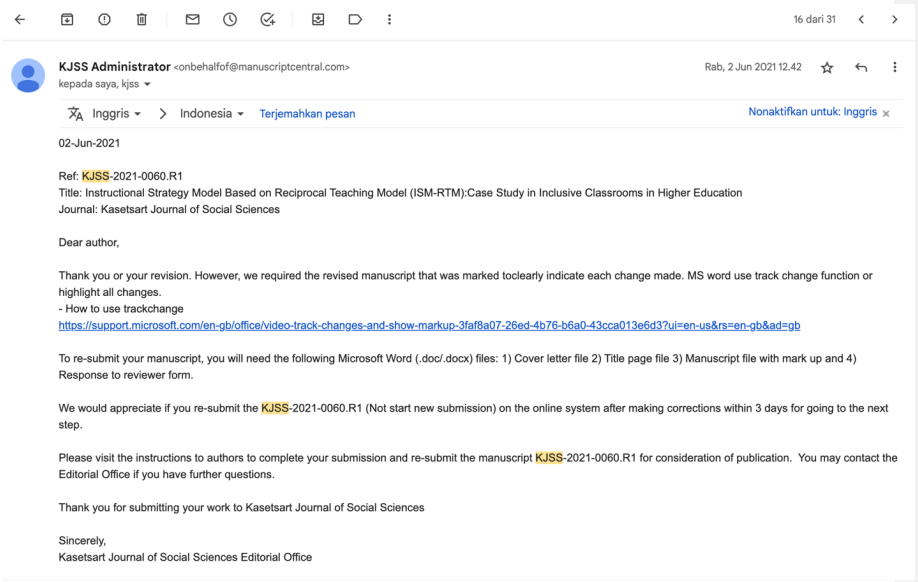
**6. Bukti konfirmasi revisi ketiga artikel dari Editor (2 Juni 2021)**



16 dari 31

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Nonaktifkan untuk: Inggris

02-Jun-2021

Ref: KJSS-2021-0060.R1
Title: Instructional Strategy Model Based on Reciprocal Teaching Model (ISM-RTM):Case Study in Inclusive Classrooms in Higher Education
Journal: Kasetsart Journal of Social Sciences

Dear author,

Thank you or your revision. However, we required the revised manuscript that was marked toclearly indicate each change made. MS word use track change function or highlight all changes.
- How to use trackchange
https://support.microsoft.com/en-gb/office/video-track-changes-and-show-markup-3faf8a07-26ed-4b76-b6a0-43cca013e6d3?ui=en-us&rs=en-gb&ad=gb

To re-submit your manuscript, you will need the following Microsoft Word (.doc/.docx) files: 1) Cover letter file 2) Title page file 3) Manuscript file with mark up and 4) Response to reviewer form.

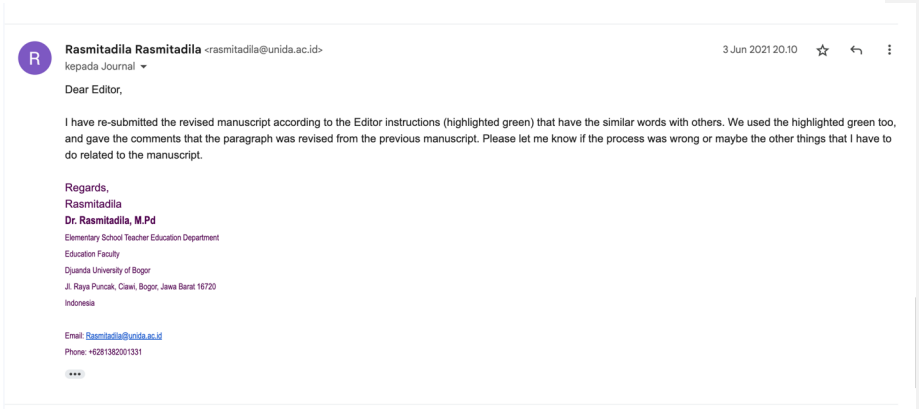
We would appreciate if you re-submit the KJSS-2021-0060.R1 (Not start new submission) on the online system after making corrections within 3 days for going to the next step.

Please visit the instructions to authors to complete your submission and re-submit the manuscript KJSS-2021-0060.R1 for consideration of publication. You may contact the Editorial Office if you have further questions.

Thank you for submitting your work to Kasetsart Journal of Social Sciences

Sincerely,
Kasetsart Journal of Social Sciences Editorial Office

**7. Bukti konformasi revisi ketiga artikel dan resubmit artikel revisi (3 Juni 2021)**



**Rasmitadila Rasmitadila** <rasmitadila@unida.ac.id> 3 Jun 2021 20.10

kepada Journal

Dear Editor,

I have re-submitted the revised manuscript according to the Editor instructions (highlighted green) that have the similar words with others. We used the highlighted green too, and gave the comments that the paragraph was revised from the previous manuscript. Please let me know if the process was wrong or maybe the other things that I have to do related to the manuscript.

Regards,
Rasmitadila

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**Editor's highlights & Response Form on KJSS: KJSS-2021-0060**

| Reviewer | Editor's highlight | Respond to Editor |
|---|---|---|
| **1** | in inclusive classrooms in higher education. Data were collected" | in inclusive classrooms in the university. Data were gathered" (page 1) |
| | inclusive classrooms in higher education are | inclusive classes related to instruction in higher education are (page 2) |
| | to the fulfillment of | still limited to complete (page 2) |
| | university is one of the best universities in West Java's | This university (page 5) |
| | academic atmosphere that provides comfort for all students to | academic conditions that can create a conducive learning environment for all students (page 5) |
| | addition to regular learning needs, for research needs, lecturers | Besides to fulfill regular instructional materials and major research, lecturers (page 5) |
| | the lecturer allows each group to argue with each other | the teacher asked all groups to argue with other groups (page 6, Table 1) |
| | from the beginning of instruction to instruction. Observations were made to document the instructional process between lecturers and students; students and students. The instrument | Observations were conducted to determine the instructional process for all the class members on the learning process using the ISM-RTM from the initial instruction to the end instruction. The observation instrument (page 6) |
| | in the form of video and audio recordings, especially the learning process based on ISM-RTM. All learning activities were recorded using a video camera and voice message. One camera was always in front of the class, while the other camera followed the lecturer and student activities when interacting. There were fourteen observation activities with 1.5-2 hours of learning. Researchers only chose five observations as data to be | Primary data was collected from video audio recordings, particularly to the instructional process used in ISM-RTM. The recording done in the instructional process using video and voice messages by placing a camera in front of the class to facilitate all observations. Meanwhile, the researcher holds the other camera to participate in all lecturer and student activities during the instructional process. There are fourteen observations in instruction, with each observation |

| | | |
|---|---|---|
| | analyzed because the ISM-RTM had been implemented well. The results of these recordings are transcripts to be used as a more detailed data analysis. Transcript results and interview results were analyzed using qualitative data analysis to obtain further results. | duration of 1.5-2 hours. The researcher considers that only the application of the ISM-RTM that has been appropriately implemented will be selected. For that, the researcher chose five observational data from fourteen observations. Furthermore, the recordings were interpreted in several transcripts, which became the basis for making data analysis (page 7) |
| | Make an explanation for each image presented! | All pictures consisting of the steps in figure 2 have been described (page 9) |
| | thematic analysis of all participants, observing learning activities from the beginning of learning to the end of learning both between teacher and student, as well as students and students, making field notes, coding, and interviewing students; (2) within-participants thematic analysis, identifying common themes from each learning activity; (3) cross participant analysis, identifying common themes among participants. The final step in data analysis | : (1) thematic analysis of all participants, observing the instructional process from the initial instructional to the end of instruction to all class members, create field notes, and coding; (2) within-participants thematic analysis; making some categories to be specific themes; (3) cross participant analysis, determine common themes. Furthermore, determining a cultural theme is the final step in data analysis to implement the ISM-RTM in inclusive classrooms in higher educations. Table 2 describes the process used in the results of data analysis: (page 8) |
| | Table 2 Qualitative data analysis | Table 2 Qualitative analysis model (Spradley (2016; Jamaris & Hartati (2017) (page 8) |
| | Increase the desire to learn | Foster interest in learning (page 8) |
| **2** | Lecturer invites students to sing along | Lecturer sings together with the students (page 9) |
| | makes a game | creates a game (page 9) |
| | Lecturer explains the relevance of the | Lecturer explains the lesson's linkage to (page 9) |

**Other:**

We have revised paragraphs and statements according to the instructions from the Editor (highlighted in green) which are indicated to have similarities with other sentences. We marked it with green color and were given a comment that it had been revised from the last article that we had revised according to the reviewer's comments.

# Instructional Strategy Model Based on Reciprocal Teaching Model (ISM-RTM): Case Study in Inclusive Classrooms in Higher Education

Instructional strategies in inclusive classrooms in higher education have not become an essential concern for lecturers who teach in inclusive classrooms. During this time, instruction has not accommodated all students' needs and competencies with various characteristics and learning styles. This research aims to identify students' opinions about implementing the instructional strategy model based on the reciprocal teaching model (ISM-RTM) in inclusive classrooms in the university. Data were gathered using classroom observations, and face-to-face interviews with 24 teacher students (22 females; 2 males), consisting of 22 regular students (RS) and 2 students with special needs (SSNs). Data analysis used a qualitative analysis model with three steps. The study results revealed that the ISM-RTM could achieve competency, namely, develop emotional skills, cognitive skills, and social skills in all students. In conclusion, the implementation of ISM-RTM was suitable for instruction in inclusive classrooms with the different characteristics, learning styles, and specificity of students in higher education

*Keywords:* instructional strategy,; reciprocal teaching,; inclusive classroom, ; higher education

Commented [r1]: Revised statement

## Introduction

Instruction in inclusive classrooms in higher education determines the competencies that all students will obtain, including special needs students (SSN). The competencies that all students will possess will largely determine students' success when entering the workforce (Patrick, Worthen, & Frost, 2018). Learning must involve communication, collaboration, innovation, and critical thinking to fulfill all the competencies needed of worked properly.

Lecturers must design instruction that can accommodate all students' needs with different characteristics, strengths, and different learning styles to fulfill all the skills students must possess (Ungar, Margaliot, Grobgeld, & Leshem, 2018).

To achieve instructional objectives that can meet the needs and competencies, the lecturer must design instructional strategies that can accommodate students' characteristics. Lecturers must create instructional strategies that can involve activeness, collaboration, and respect for all the limitations and weaknesses of all students (Sayeski, 2009; Buli-Holmberg & Jeyaprathaban, 2016). For the instructional strategy to be compatible with inclusive classrooms' characteristics, the lecturer must understand all students' characteristics, learning styles, weaknesses, and strengths. This is so that we can achieve all student competencies following instructional objectives (Gregory & Chapman, 2012).

But the fact is, there are still many lecturers who do not understand, plan and implement learning or instructional strategies that are friendly and follow the characteristics of inclusive classrooms. Various problems faced by lecturers in inclusive classes related to instruction in higher education are still limited to complete the obligation to deliver subject matter, without regard to the real instructional objectives (Molina et al., 2016; Ostrow Michel, 2020). Lecturers do not understand students' characteristics, especially SSN, and continue using one-way instructional methods with the lecturer as a learning center. The impact is that not all competencies that students should obtain can be optimally accommodated. For this reason, instructional strategies should be an essential concern for lecturers before carrying out learning to achieve instructional objectives following predetermined (Ávila et al., 2019).

One instructional strategy that can develop student skills in inclusive classrooms is an instructional strategy model based on the reciprocal teaching model (ISM-RTM) (Mitchell, 2008). The ISM-RTM is a model that can maximize student competency in learning activities for all students, including students with special needs (Cárdenas & López-Pinzón, 2019;

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Palincsar, 2012); Brown & Palincsar, 1987), a set of learning plans that involve students in developing cognitive aspects influenced by interactions with people who have extensive knowledge, such as experts, educators, parents, and peers who encourage students to have more expertise be more competent (Clark, 2003; Rosenshine & Meister, 1994). Meanwhile, ISM-RTM involves all class members learning from each other. Lecturers can facilitate learning by grouping students in groups consisting of students with special needs and regular students, so they teach one another. The purpose of the ISM-RTM is to provide reading or cognitive understanding, provide learning experiences, and improve the affective aspects of mutual respect and empathy between students to achieve learning targets following the lecturer's goals (Mitchell, 2008).

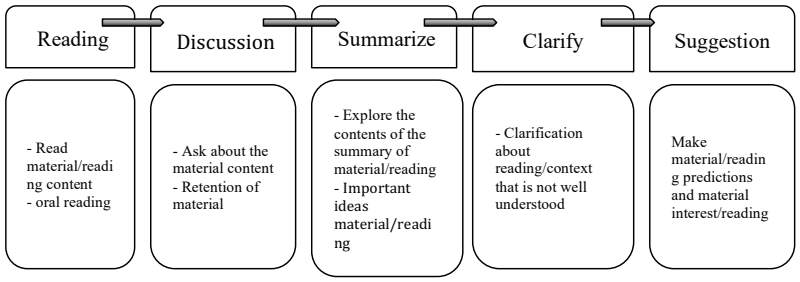


**Figure 1** Reciprocal Teaching Model (Mitchell, 2008)

ISM-RTM is an instructional model with 5 stages with each stage consisting of specific activities. First stage is reading that provides the opportunity for students to read material (reading text) which is done by reading silently, or orally according to the student's abilities. The second stage is discussion that carried out by asking a number of questions about the reading content and providing opportunities for students to provide additional questions. This discussion aims to provide an in-depth understanding of the reading content, through interesting questions in order to obtain interesting information from the content / subject matter. The third stage is summarize that make statement sentences related to points or conclusions

from the content/subject matter, through discussions that have been carried out. The fourth stage is clarify or confirm the content/material that has been studied if there are still statements that are doubtful or unclear. The fifth stage is suggestion that give suggestions and ask students to make a "prediction" of the next content / material that involves previous knowledge through symbols, pictures, graphics or issues that aim to make students have an interest in learning the next lesson content (Mitchell, 2008).

The purpose of this study is to explore student opinions about the competencies of implementation of the ISM-RTM in inclusive classrooms in higher education.

**Methods**

This study used a qualitative approach with a case study to identify student opinions about the ISM-RTM in inclusive classrooms in higher educations. A qualitative approach explores people's opinions or thoughts more deeply about the topic being studied (Khotari, 2004).

***Participants***

Participants in this study came from one of the inclusive classrooms in the elementary school curriculum development course at one of the private institutions of higher education in West Java, Indonesia. The students involved were 5th-semester, with a total of twenty-four (N=24) students consisting of twenty-two females and two males with an age range of 18-19 years old. The number of SSN (2 males) in this classroom was two in the cerebral palsy category, and another was categorized as a slow learner.

Characteristics of a student with cerebral palsy in this class were an abnormality in one of the arms and fingers that could not be moved, so there was a limited movement in the right-hand area. While slow learner students with characteristics have low learning motivation, low learning outcomes, and weak interaction and communication, such was the case with the slow

learner student in this study. Lecturers involved in learning were female lecturers with teaching experience for seven years and had competence in inclusive classroom learning.

***Material and Methods***

The research was conducted in one of the private universities that openly accept all students' characteristics, both RS and SSN. Some types of SSNs who have been accepted are slow learners, cerebral palsy, ADHD, learning difficulties, bipolar, limited vision (low vision). This university-based on Islamic Tauhid (Monotheism) provides opportunity and justice for every student to get an education without exception.

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Classrooms are set according to class categories that have SSNs. Arrangement of physical facilities such as chairs, tables, or other learning tools illustrates the academic conditions that can create a conducive learning environment for all students to develop all their potential, including SSNs. Instruction is carried out inside and outside the classroom with various instructional methods such as observation, discussion, and practice.

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During this study, the course used was the elementary school's curriculum development, with five meetings, with each meeting consisting of 1.5 hours to 2 hours of face-to-face learning. Instructional materials included the curriculum's basic concepts, curriculum development foundation, curriculum components, curriculum design, and curriculum development models. Besides to fulfill regular instructional materials and major research, lecturers created ISM-RTM. Table 1 below is an example of an ISM-RTM:

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**Table 1** An example of Implementation of ISM-RTM

| No | Material / Topic of learning | RTM | Steps / Learning Sequence Learning | Method | Media | Materials | Assessment | Time allocation |
|---|---|---|---|---|---|---|---|---|
| 1 | The basic concept of curriculum | | | | | | | |
| **Initial instructional activities** | | | | | | | | |
| | | Reading | a. Lecturers provide reading material or references that students must read with their respective groups. | Exercise Discussion | Infocus Powerpoint | e-book journal | Discussion rubric | 20 minutes |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | b. Each group found a problem that occurred following the topic of the | | | | | |
| **Main Instructional Activities** | | | | | | | | |
| | | Discussion | a. The lecturer asks each group to divide their group members between choosing one topic to focus on.<br>b. Lecturers created small discussion groups with the same issue as other groups or expert groups.<br>c. Every group member who has the same topic discusses the topic regarding a problem. | Jigsaw Discussion | Infocus Powerp oint | e-book journal | discussio n rubric | 20 minu tes |
| | | Summarize | a. Each group member returns to his homegroup.<br>b. Each origin group explains each topic from the expert group.<br>c. Each origin group presents the topics that are considered the most important to be displayed. | Jigsaw Discussion of | Infocus Powerp oint | Journal e-book | Rubric | 35 minu tes |
| | | Clarify | a. Each group discusses, and the teacher asked all groups to argue with other groups and give an opinion | Discussion on | Infocus Powerp oint | Journal e-book | - | 25 minu tes |
| **Closing Activities** | | | | | | | | |
| | | Suggestion | a. The lecturer explains the topic that each group still debates.<br>b. Lecturer makes a conclusion | Expository | | | - | 15 minu tes |
| | Lecturer Reflection on instruction:<br><br>The advantages of today's learning are that all students, including SSN , actively discussed and gave opinions. Each group leader provided equal opportunity for group members to be able to give their opinions. Each group could already explain the purpose of the topic being studied.<br>Weaknesses: There are still students who are not confident when presenting or speaking in front of the class, including SSN, so they must practice often.<br>For future efforts, SSN must be given a "bigger" portion so that their self-confidence is higher and their motivation for learning will be better. | | | | | | | |

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### *Data Collection*

Data collection was done through several data sources, namely classroom observation, interviews, and documentation. Observations were conducted to determine the instructional process for all the class members on the learning process using the ISM-RTM from the initial instruction to the end instruction. The observation instrument was used an observation guide related to instruction using the ISM-RTM. The interview was conducted with a semi-structured face-to-face session, which had been designed to identify SNSs opinions. The questions provided consisted of twelve open questions to get more in-depth data. Two experts validated interview questions with instructional design and inclusive education expertise, which upon revisions were made according to the expert's direction.

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Commented [r9]: Revised statement

The interview stage was conducted for three days, with ten people of 24 students every day, with an average of 3-4 hours. Primary data was collected from video audio recordings, particularly to the instructional process used in ISM-RTM. The recording done in the instructional process using video and voice messages by placing a camera in front of the class to facilitate all observations. Meanwhile, the researcher holds the other camera to participate in all lecturer and student activities during the instructional process. There are fourteen observations in instruction, with each observation duration of 1.5-2 hours. The researcher considers that only the application of the ISM-RTM that has been appropriately implemented will be selected. For that, the researcher chose five observational data from fourteen observations. Furthermore, the recordings were interpreted in several transcripts, which became the basis for making data analysis.

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***Instruments***

The instruments used consisted of two types, namely observation and interview. The observation instrument consists of an observation guide based on the conceptual definition of the ISM-RTM. The guide focuses on 5 steps that have been designed in the form of learning content. Researchers must ensure that each step has been carried out by the lecturer (given a checklist). Meanwhile, the interview instrument consisted of twelve open questions, which were given to RSs and SSNs. The interview technique used was a semi-structured and open-ended interview type. So that researchers can explore every question and answer from each student. The interview instruments consist of three general parts, namely students' understanding of ISM-RTM, the benefits of using ISM-RTM, and obstacles in implementing ISM-RTM in an inclusive classroom. Both RSs and SSNs are given the same questions, so that researchers can explore each student's answer, although in the end there are answers that vary depending on student characteristics.

***Data Analysis***

Data analysis was performed using a qualitative analysis model (Spradley, 2016; Jamaris & Hartati, 2017) consisting of three steps, namely: (1) thematic analysis of all participants, observing the instructional process from the initial instructional to the end of instruction to all class members, create field notes, and coding; (2) within-participants thematic analysis; making some categories to be specific themes; (3) cross participant analysis, determine common themes. Furthermore, determining a cultural theme is the final step in data analysis to implement the ISM-RTM in inclusive classrooms in higher educations. Table 2 describes the process used in the results of data analysis:

**Table 2** Qualitative analysis model (Spradley (2016; Jamaris & Hartati (2017)

| Included Term | Semantic Relation | Cover Term |
|---|---|---|
| -Foster interest in learning<br>-Increase learning motivation | Is part of | Emotional skill development |
| -Growing a culture of literacy problem-solving skills<br>-Practicing-Adding new knowledge | Is part of | Cognitive skill development |
| -Improve collaboration<br>-Improve learning interactions | Is part of | Social skill development |

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**Commented [r12]:** Revised statement

## Results and Discussion

The results of data analysis are illustrated in Figure 2 below:

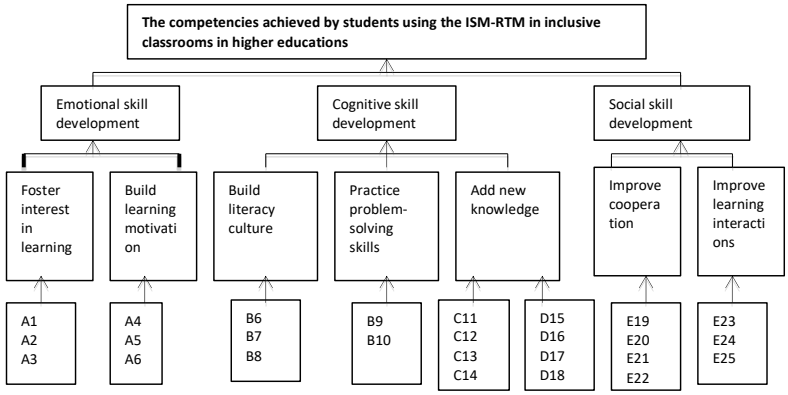


**Figure 2** Competencies achieved by students using the ISM-RTM model in inclusive classrooms

Notes:

A1: Lecturer sings together with the students
A2: Lecturer creates a game in class
A3: Lecturer presents an example case
A3: Lecturer explains the benefits of the lesson
A4: Lecturer explains the lesson's linkage to daily life
A5: Lecturer asks about problems that are relevant to the topic
B6: Lecturer gives the topic of reading
B7: The lecturer provides a chance for each student to make important points from reading
B8: Students focus on reading material that is not yet understood or that is important to discuss
B9: Students look for reading material that is the same as the topic to be addressed
B10: Lecturer makes opening questions for a case
C11: Lecturer provides opportunities to each group member to discuss the topic according to the reading
C12: Each group member presents reading material that is the focus and topic according to their task
C13: Each group member exchanges reading material with other group members with the same topic
C14: Each group member with the same topic and focus has a discussion
D15: Each group member returns to his group early to discuss
D16: Each group member provides opinions and solutions to the topic in the form of a problem
D17: The lecturer allows each group to present the problem according to the topic
D18: The lecturer gives clarification and understanding to all students
E19: Students work and study together in a group
E20: Regular students discuss with SSNs
E21: Regular students listen to SSNs' opinions
E22: All students play together in a group
E23: Each student gives an opinion in groups
E24: SSNs give an opinion in the group
E25: Each student is involved in a presentation (question and answer)

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**Commented [r14]:** Revised statement

**Commented [r15]:** Revised statement

At the lowest level (A1-E25) are activities carried out at each learning step, which is obtained from observation activities (the thematic analytic process step). Furthermore, at the second level, it produces categories resulting from observations and interviews (within participants). The third level results in combining several categories to produce specific themes (cross participants).

***Emotional skill development***

Emotional skills development is an ability that students will possess after undergoing learning, especially using the ISM-RTM. Emotional skills development helps foster student interest in learning and fosters a motivation to learn (Vongkulluksn, Matewos, Sinatra, & Marsh, 2018; Foster, 2019). Students' positive and negative opinions towards emotional development give more positive impacts than negative impacts to develop development emotional competence better. The most challenging thing for a lecturer when teaching lecture material is to foster student interest in learning so that students want to learn the subject matter.

This is related to the background of each different student. Not every student has the same learning ability and academic achievement. In inclusive classrooms, with differences and characteristics, a lecturer must invite all students to have a positive interest in learning (Pearson et al., 2019; Van der Bij, Geijsel, Garst, & Ten Dam, 2016).

The use of ISM-RTM through 5 stages of activity provides free space for lecturers to foster student interest in learning. Students are given activities that directly practice what will be learned without dictating or explaining at length and without knowing the material's substance. This is consistent with the opinion of SSN below:

"For me, it is challenging to start learning because of the limitations of my movements. Sometimes I am shy and not open enough to begin studying. But when a lecturer starts learning by giving an example of someone's success, I become interested in learning".

The use of methods adapted to students' ability, encouragingly, will increase student interest in learning (Johnson, 2017). Besides, lecturers can explain learning by linking subject matter with a person's success story to learn the material. Moreover, such is the case with the characteristics of students who have different backgrounds, diversity, and learning styles. In the ISM-RTM, it is hoped that an exciting and enjoyable learning atmosphere can give students an idea of their learning goals and the benefits that will be achieved in the future.

All students are actively involved in every learning activity, including students with special needs. For RS, the use of the ISM-RTM can foster motivation to learn, such as the opinion below:

"It is important for me to have the motivation to learn so that I know what I am learning and what the benefits of the lesson are. My lecturer has given a concrete example in a game that can motivate me to complete the instructional objectives without me knowing before ".

Fostering motivation to learn for students aims to understand the subject matter's purpose to be learned. Of course, this is related to the interest in learning, which also grows at the beginning of learning. High motivation to learn will make it easier for students to achieve the stated lesson objectives before learning (Billingsley, Thomas, & Webber, 2018).

***Cognitive skills development***

Cognitive skills development is the ability to think from remembering to evaluation and creation, which is done by combining several ideas and ideas to solve problems. Student's opinions on developing cognitive skills provided consisted of more positive opinions than negative opinions. The use of the ISM-RTM model provides an opportunity for students to solve problems through reading activities, discussions, understanding the contents of the material read, and classifying the reading contents to conclude a particular topic. This ISM-RTM model's benefits can improve student literacy, problem-solving skills, and ability to gain new knowledge, which has been an issue in previous lessons or even material that has never been discussed at previous meetings.

The use of the ISM-RTM has provided opportunities for every student to be able to practice problem-solving skills. Practicing problem-solving is very important for all students, including students with special needs (Karatas & Baki, 2017). It is hoped that this exercise is a positive step when they work at an institution after college. Students are expected to provide solutions to problems that occur at work as part of problem-solving. This is related to SSN's opinion:

> "I am ashamed to express opinions in-group members, but now I am given the opportunity even encouraged by friends to be able to give opinions and ideas so that I feel the same as my friends when they express an opinion."

Both student opinions give an overview that the use of the ISM-RTM provides an opportunity for every student to be active, express opinions and ideas related to problems or

questions that must be solved together. Equal opportunity without discrimination and fairness for each group member in expressing opinions can practice problem-solving skills more clearly (Siegel-Hawley & Frankenberg, 2012).

Each student can express opinions or ideas that are processed from various sources to be discussed together in a group forum. Reading activities and expressing their opinions are felt by students to provide many benefits (Rogers & Ardoin, 2018). Among other things, add insight into knowledge, understand the renewability of the source of knowledge from books, journals, and opinions. And can solve problems faced by students related to the subject matter. This benefit can be illustrated by one of the following regular students:

"I am lazy to read, but with the learning process of this RTM model, I have to read, and it helps me to be diligent in reading. This greatly affects my reading activity. "

The ISM-RTM provides new knowledge from the subject matter being studied and trains problem solving and critical thinking. Through reading activities at the beginning of instruction, students must understand the material, process, and produce opinions following the theory and dynamics of the development of developing science (Molotja & Themane, 2018).

***Social skills development***

Social skills describe social interaction both between lecturers and students and between students and students. Student's opinions about developing social skills provided consisted of more positive opinions than negative opinions. Social skills describe social interaction both between lecturers and students and between students and students. Besides, good cooperation between lecturers and students and students and students will improve social skills (Doyle, 2012).

The ISM-RTM provides opportunities for each student to understand the topic being studied through discussion, question and answer, and debate activities. Through the ISM-RTM, starting from the beginning of learning, lecturers have designed learning so that activities are

carried out in groups. The information obtained by each group member varies and complements each other.

Some positive opinions of this collaboration, according to students, can hone one another's empathy, mutual respect for opinions and increase learning activity (Elfrida Yanti Siregar et al., 2019). In-group activities, selfishness can usually be reduced because there is mutual respect. Even such, selfish feelings of acceptance of opinions are often seen in discussion activities, especially for regular students. In addition to positive opinions, there are negative opinions from collaborative activities carried out by students, such as if they do not agree or disagree with SSNs; it is not uncommon for SSNs to get bullied, especially in the form of verbal expression. This feeling of getting bullied remains when SSNs attend group discussion forums. This opinion can be seen in the opinion of SSNs below:

"I was a bit worried when my discussion and opinion were not considered. I am afraid of getting bullied by other students. This is because several times, I've felt it ".

The ISM-RTM can train this sense of cooperation through the stages of the learning model. Like the discussion stage, summarize and clarify stages, which provide equal opportunities for each group member to express their opinions. Of course, supervision from the lecturer is required to proceed according to the stages and achievements key in implementing ISM-RTM.

Every step in the ISM-RTM provides opportunities between lecturers and students and students and students in all directions of learning interactions. The interaction of learning in inclusive classrooms is the key to success in learning. Without interaction, lecturers find it difficult to know their achievement or understanding of the material being studied.

In inclusive classrooms where students have diverse characteristics, learning interactions become unique (Rasmitadila, Samsudin, & Prasetyo, 2019). Especially the interaction between regular students and special needs students. The interaction between the

two must often use different methods and requires patience for the interaction to take place. For regular students, they should assume that SSNs also get the same opportunities in learning, expressing opinions so that they still get equal rights as other students. The RS must understand the limitations and weaknesses of every SSN so that the attendance and opinions of SSNs are as important as the presence and opinions of the RS.

Differences in characteristics and the diversity of learning styles in inclusive classrooms should be a concern for lecturers. This greatly affects the achievement of all students and the class to understand the material being studied. Interaction in learning is about teachers knowing about the achievement of learning outcomes and understanding what difficulties students face when studying (Harper, 2018).

**Conclusion and Recommendation**

Student opinions about the use of the ISM-RTM positively impacted emotional skills development, cognitive skills, and social skills for all students, including SSNs. Emotional skills development was evident by the growing interest in learning and increased motivation to learn. The development of cognitive skills was shown by the growth of a literacy culture, practice as a problem solver, and increased new knowledge for students related to the topic or material being studied. The development of social skills is shown by the formation of cooperation between students and the occurrence of interactions in learning activities.

The use of the ISM-RTM is very suitable for inclusive classrooms in higher education. The ISM-RTM can accommodate all the needs of students with various characteristics, learning styles, and strengths and weaknesses when implementing learning.

**Acknowledgments**

This work was supported by the Ministry of Research, Technology, and Higher Education of the Republic of Indonesia through Grant the Assistance with Special Learning Innovations in Higher Education, 2019.

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Author Dashboard

**Author Dashboard**

- 2 Manuscripts with Decisions
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## Manuscripts with Decisions

| ACTION | STATUS | ID | TITLE | SUBMITTED | DECISIONED |
|---|---|---|---|---|---|
| | ADM: Administrator, KJSS<br>• Accept (13-Jun-2021)<br>• Awaiting Production Checklist<br>view decision letter<br>Contact Journal | KJSS-2021-0060.R1 | Instructional Strategy Model Based on Reciprocal Teaching Model (ISM-RTM):Case Study in Inclusive Classrooms in Higher Education<br>View Submission | 03-Jun-2021 | 13-Jun-2021 |
| a revision has been submitted (KJSS-2021-0060.R1) | ADM: Administrator, KJSS<br>• Minor Revision (25-Apr-2021)<br>• a revision has been submitted<br>view decision letter<br>Contact Journal | KJSS-2021-0060 | Instructional Strategy Model Based on Reciprocal Teaching Model (ISM-RTM) in Inclusive Classrooms in Higher Education<br>View Submission | 21-Mar-2021 | 25-Apr-2021 |

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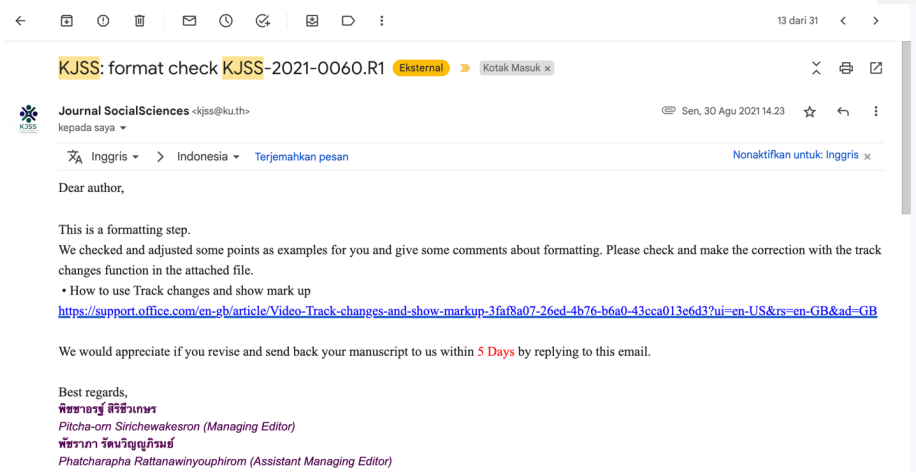

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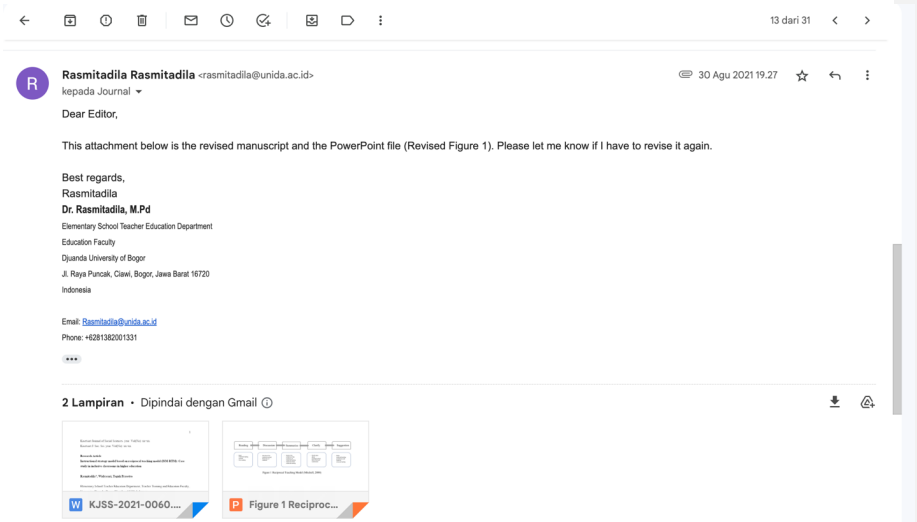
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**Research Article**

# Instructional strategy model based on reciprocal teaching model (ISM-RTM): Case study in inclusive classrooms in higher education

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Article history:
Received
Revised
Accepted
Available online

Keywords:
higher education,
inclusive classroom,
instructional strategy,
reciprocal teaching

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**Abstract**

Instructional strategies in inclusive classrooms in higher education have not become an essential concern for lecturers who teach in inclusive classrooms. During this time, instruction has not accommodated all students' needs and competencies with various characteristics and learning styles. This research aims to identify students' opinions about implementing the instructional strategy model based on the reciprocal teaching model (ISM-RTM) in inclusive classrooms in the university. Data were gathered using classroom observations, and face-to-face interviews with 24 teacher students (22 females; 2 males), consisting of 22 regular students (RS) and 2 students with special needs (SSNs). Data analysis used a qualitative analysis model with three steps. The study results revealed that the ISM-RTM could achieve competency, namely, develop emotional skills, cognitive skills, and social skills in all students. In conclusion, the implementation of ISM-RTM was suitable for instruction in inclusive classrooms with the different characteristics, learning styles, and specificity of students in higher education

**Introduction**

Instruction in inclusive classrooms in higher education determines the competencies that all students will obtain, including special needs students (SSN). The competencies that all students will possess will largely determine students' success when entering the workforce (Patrick, Worthen, & Frost, 2018). Learning must involve communication, collaboration, innovation, and critical thinking to fulfill all the competencies needed of worked properly. Lecturers must design instruction that can accommodate all students' needs with different

characteristics, strengths, and different learning styles to fulfill all the skills students must possess (Ungar, Margaliot, Grobgeld, & Leshem, 2018).

To achieve instructional objectives that can meet the needs and competencies, the lecturer must design instructional strategies that can accommodate students' characteristics. Lecturers must create instructional strategies that can involve activeness, collaboration, and respect for all the limitations and weaknesses of all students (Sayeski, 2009; Buli-Holmberg & Jeyaprathaban, 2016). For the instructional strategy to be compatible with inclusive classrooms' characteristics, the lecturer must understand all students' characteristics, learning styles, weaknesses, and strengths. This is so that we can achieve all student competencies following instructional objectives (Gregory & Chapman, 2012).

But the fact is, there are still many lecturers who do not understand, plan and implement learning or instructional strategies that are friendly and follow the characteristics of inclusive classrooms. Various problems faced by lecturers in inclusive classes related to instruction in higher education are still limited to complete the obligation to deliver subject matter, without regard to the real instructional objectives (Molina, Perera Rodríguez, Melero Aguilar, Cotán Fernández, & Moriña, 2016; Ostrow Michel, 2019). Lecturers do not understand students' characteristics, especially SSN, and continue using one-way instructional methods with the lecturer as a learning center. The impact is that not all competencies that students should obtain can be optimally accommodated. For this reason, instructional strategies should be an essential concern for lecturers before carrying out learning to achieve instructional objectives following predetermined (Ávila et al., 2019).

One instructional strategy that can develop student skills in inclusive classrooms is an instructional strategy model based on the reciprocal teaching model (ISM-RTM) (Mitchell, 2008). The ISM-RTM is a model that can maximize student competency in learning activities for all students, including students with special needs (Cárdenas & López-Pinzón, 2019;

Palincsar, 2019; Brown & Palincsar, 1987), a set of learning plans that involve students in developing cognitive aspects influenced by interactions with people who have extensive knowledge, such as experts, educators, parents, and peers who encourage students to have more expertise be more competent (Clark, 2003; Rosenshine & Meister, 1994). Meanwhile, ISM-RTM involves all class members learning from each other. Lecturers can facilitate learning by grouping students in groups consisting of students with special needs and regular students, so they teach one another. The purpose of the ISM-RTM is to provide reading or cognitive understanding, provide learning experiences, and improve the affective aspects of mutual respect and empathy between students to achieve learning targets following the lecturer's goals (Mitchell, 2008).

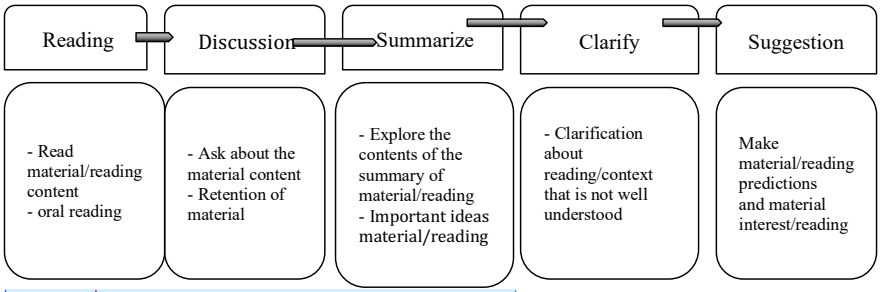


**Figure 1** Reciprocal Teaching Model (Mitchell, 2008)

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ISM-RTM is an instructional model with 5 stages with each stage consisting of specific activities. First stage is reading that provides the opportunity for students to read material (reading text) which is done by reading silently, or orally according to the student's abilities. The second stage is discussion that carried out by asking a number of questions about the reading content and providing opportunities for students to provide additional questions. This discussion aims to provide an in-depth understanding of the reading content, through interesting questions in order to obtain interesting information from the content / subject matter.

The third stage is summarize that make statement sentences related to points or conclusions from the content/subject matter, through discussions that have been carried out. The fourth stage is clarify or confirm the content/material that has been studied if there are still statements that are doubtful or unclear. The fifth stage is suggestion that give suggestions and ask students to make a "prediction" of the next content / material that involves previous knowledge through symbols, pictures, graphics or issues that aim to make students have an interest in learning the next lesson content (Mitchell, 2008).

The purpose of this study is to explore student opinions about the competencies of implementation of the ISM-RTM in inclusive classrooms in higher education.

## Methodology

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This study used a qualitative approach with a case study to identify student opinions about the ISM-RTM in inclusive classrooms in higher educations. A qualitative approach explores people's opinions or thoughts more deeply about the topic being studied (Khotari, 2004).

### *Participants*

Participants in this study came from one of the inclusive classrooms in the elementary school curriculum development course at one of the private institutions of higher education in West Java, Indonesia. The students involved were 5th-semester, with a total of twenty-four ($N = 24$) students consisting of twenty-two females and two males with an age range of 18–19 years old. The number of SSN (2 males) in this classroom was two in the cerebral palsy category, and another was categorized as a slow learner.

Characteristics of a student with cerebral palsy in this class were an abnormality in one of the arms and fingers that could not be moved, so there was a limited movement in the right-hand area. While slow learner students with characteristics have low learning motivation, low learning outcomes, and weak interaction and communication, such was the case with the slow learner student in this study. Lecturers involved in learning were female lecturers with teaching experience for seven years and had competence in inclusive classroom learning.

*Material and Methods*

The research was conducted in one of the private universities that openly accept all students' characteristics, both RS and SSN. Some types of SSNs who have been accepted are slow learners, cerebral palsy, ADHD, learning difficulties, bipolar, limited vision (low vision). This university-based on Islamic Tauhid (Monotheism) provides opportunity and justice for every student to get an education without exception.

Classrooms are set according to class categories that have SSNs. Arrangement of physical facilities such as chairs, tables, or other learning tools illustrates the academic conditions that can create a conducive learning environment for all students to develop all their potential, including SSNs. Instruction is carried out inside and outside the classroom with various instructional methods such as observation, discussion, and practice.

During this study, the course used was the elementary school's curriculum development, with five meetings, with each meeting consisting of 1.5 hours to 2 hours of face-to-face learning. Instructional materials included the curriculum's basic concepts, curriculum development foundation, curriculum components, curriculum design, and curriculum development models. Besides to fulfill regular instructional materials and major research, lecturers created ISM-RTM. Table 1 below is an example of an ISM-RTM:

**Table 1** An example of Implementation of ISM-RTM

| No | Material / Topic of learning | RTM | Steps / Learning Sequence Learning | Method | Media | Materials | Assessment | Time allocation |
|---|---|---|---|---|---|---|---|---|
| 1 | The basic concept of curriculum | | | | | | | |
| Initial instructional activities | | | | | | | | |
| | | Reading | a. Lecturers provide reading material or references that students must read with their respective groups.<br>b. Each group found a problem that occurred following the topic of the | Exercise<br>Discussion | Infocus<br>Powerpoint | e-book<br>journal | Discussion rubric | 20 minutes |
| Main Instructional Activities | | | | | | | | |
| | | Discussion | a. The lecturer asks each group to divide their group members between choosing one topic to focus on.<br>b. Lecturers created small discussion groups with the same issue as other groups or expert groups.<br>c. Every group member who has the same topic discusses the topic regarding a problem. | Jigsaw<br>Discussion | Infocus<br>Powerpoint | e-book<br>journal | discussion rubric | 20 minutes |
| | | Summarize | a. Each group member returns to his homegroup.<br>b. Each origin group explains each topic from the expert group.<br>c. Each origin group presents the topics that are considered the most important to be displayed. | Jigsaw<br>Discussion of | Infocus<br>Powerpoint | Journal<br>e-book | Rubric | 35 minutes |
| | | Clarify | a. Each group discusses, and the teacher asked all groups to argue with other groups and give an opinion | Discussion on | Infocus<br>Powerpoint | Journal<br>e-book | - | 25 minutes |
| Closing Activities | | | | | | | | |
| | | Suggestion | a. The lecturer explains the topic that each group still debates.<br>b. Lecturer makes a conclusion | Expository | | | - | 15 minutes |

Lecturer Reflection on instruction:
The advantages of today's learning are that all students, including SSN, actively discussed and gave opinions. Each group leader provided equal opportunity for group members to be able to give their opinions. Each group could already explain the purpose of the topic being studied.
Weaknesses: There are still students who are not confident when presenting or speaking in front of the class, including SSN, so they must practice often.
For future efforts, SSN must be given a "bigger" portion so that their self-confidence is higher and their motivation for learning will be better.

*Data Collection*

Data collection was done through several data sources, namely classroom observation, interviews, and documentation. Observations were conducted to determine the instructional process for all the class members on the learning process using the ISM-RTM from the initial instruction to the end instruction. The observation instrument was used an observation guide related to instruction using the ISM-RTM. The interview was conducted with a semi-structured face-to-face session, which had been designed to identify SNSs opinions. The questions provided consisted of twelve open questions to get more in-depth data. Two experts validated interview questions with instructional design and inclusive education expertise, which upon revisions were made according to the expert's direction.

The interview stage was conducted for three days, with ten people of 24 students every day, with an average of 3–4 hours. Primary data was collected from video audio recordings, particularly to the instructional process used in ISM-RTM. The recording done in the instructional process using video and voice messages by placing a camera in front of the class to facilitate all observations. Meanwhile, the researcher holds the other camera to participate in all lecturer and student activities during the instructional process. There are fourteen observations in instruction, with each observation duration of 1.5–2 hours. The researcher considers that only the application of the ISM-RTM that has been appropriately implemented will be selected. For that, the researcher chose five observational data from fourteen observations. Furthermore, the recordings were interpreted in several transcripts, which became the basis for making data analysis.

*Instruments*

The instruments used consisted of two types, namely observation and interview. The observation instrument consists of an observation guide based on the conceptual definition of the ISM-RTM. The guide focuses on 5 steps that have been designed in the form of learning content. Researchers must ensure that each step has been carried out by the lecturer (given a checklist). Meanwhile, the interview instrument consisted of twelve open questions, which were given to RSs and SSNs. The interview technique used was a semi-structured and open-ended interview type. So that researchers can explore every question and answer from each student. The interview instruments consist of three general parts, namely students' understanding of ISM-RTM, the benefits of using ISM-RTM, and obstacles in implementing ISM-RTM in an inclusive classroom. Both RSs and SSNs are given the same questions, so that researchers can explore each student's answer, although in the end there are answers that vary depending on student characteristics.

*Data Analysis*

Data analysis was performed using a qualitative analysis model (Spradley, 2016; Jamaris & Hartati, 2017) consisting of three steps, namely: (1) thematic analysis of all participants, observing the instructional process from the initial instructional to the end of instruction to all class members, create field notes, and coding; (2) within-participants thematic analysis; making some categories to be specific themes; and (3) cross participant analysis, determine common themes. Furthermore, determining a cultural theme is the final step in data analysis to implement the ISM-

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RTM in inclusive classrooms in higher educations. Table 2 describes the process used in the results of data analysis:

**Table 2** Qualitative analysis model (Spradley (2016; Jamaris & Hartati (2017)

| Included Term | Semantic Relation | Cover Term |
|---|---|---|
| - Foster interest in learning<br>- Increase learning motivation | Is part of | Emotional skill development |
| - Growing a culture of literacy problem-solving skills<br>- Practicing-Adding new knowledge | Is part of | Cognitive skill development |
| - Improve collaboration<br>- Improve learning interactions | Is part of | Social skill development |

**Results and Discussion**

The results of data analysis are illustrated in Figure 2 below:

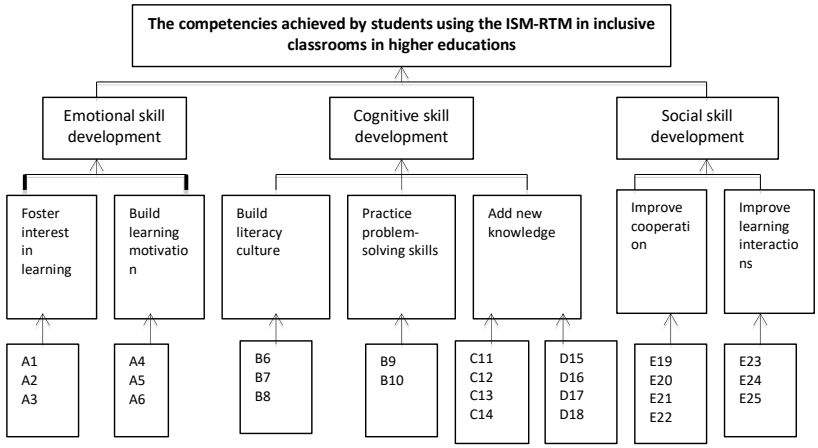


**Figure 2** Competencies achieved by students using the ISM-RTM model in inclusive classrooms

*Notes*:A1 = Lecturer sings together with the students; A2 = Lecturer creates a game in class; A3 = Lecturer presents an example case; A3 = Lecturer explains the benefits of the lesson; A4 = Lecturer explains the lesson's linkage to daily life; A5 = Lecturer asks about problems that are relevant to the topic; B6 = Lecturer gives the topic of reading; B7 = The lecturer provides a chance for each student to make important points from reading; B8 = Students focus on reading material that is not yet understood or that is important to discuss; B9 = Students look for reading material that is the same as the topic to be addressed; B10 = Lecturer makes opening questions for a case; C11 = Lecturer provides opportunities to each group member to discuss the topic according to the reading; C12 = Each group member presents reading material that is the focus and topic according to their task; C13 = Each group member exchanges reading material with other group members with the same topic; C14 = Each group member with the same topic and focus has a discussion; D15 = Each group member returns to his group early to discuss ; D16 = Each group member provides opinions and solutions to the topic in the form of a problem; D17 = The lecturer allows each group to present the problem according to the topic; D18 = The lecturer gives clarification and understanding to all students ; E19 = Students work and study together in a group; E20 = Regular students discuss with SSNs; E21 = Regular students listen to SSNs' opinions; E22 = All students play together in a group; E23 = Each student gives an opinion in groups; E24 = SSNs give an opinion in the group; E25 = Each student is involved in a presentation (question and answer)

At the lowest level (A1-E25) are activities carried out at each learning step, which is obtained from observation activities (the thematic analytic process step). Furthermore, at the second level, it produces categories resulting from observations and interviews (within participants). The third level results in combining several categories to produce specific themes (cross participants).

*Emotional Skill Development*

Emotional skills development is an ability that students will possess after undergoing learning, especially using the ISM-RTM. Emotional skills development helps foster student interest in learning and fosters a motivation to learn (Vongkulluksn, Matewos, Sinatra, & Marsh, 2018; Foster, 2019). Students' positive and negative opinions towards emotional development give more positive impacts than negative impacts to develop development emotional competence

better. The most challenging thing for a lecturer when teaching lecture material is to foster student interest in learning so that students want to learn the subject matter. This is related to the background of each different student. Not every student has the same learning ability and academic achievement. In inclusive classrooms, with differences and characteristics, a lecturer must invite all students to have a positive interest in learning (Pearson et al., 2019; Van der Bij, Geijsel, Garst, & Ten Dam, 2016).

The use of ISM-RTM through 5 stages of activity provides free space for lecturers to foster student interest in learning. Students are given activities that directly practice what will be learned without dictating or explaining at length and without knowing the material's substance. This is consistent with the opinion of SSN below:

"For me, it is challenging to start learning because of the limitations of my movements. Sometimes I am shy and not open enough to begin studying. But when a lecturer starts learning by giving an example of someone's success, I become interested in learning".

The use of methods adapted to students' ability, encouragingly, will increase student interest in learning (Johnson, 2017). Besides, lecturers can explain learning by linking subject matter with a person's success story to learn the material. Moreover, such is the case with the characteristics of students who have different backgrounds, diversity, and learning styles. In the ISM-RTM, it is hoped that an exciting and enjoyable learning atmosphere can give students an idea of their learning goals and the benefits that will be achieved in the future.

All students are actively involved in every learning activity, including students with special needs. For RS, the use of the ISM-RTM can foster motivation to learn, such as the opinion below:

*"It is important for me to have the motivation to learn so that I know what I am learning and what the benefits of the lesson are. My lecturer has given a concrete example in a game that can motivate me to complete the instructional objectives without me knowing before."*

Fostering motivation to learn for students aims to understand the subject matter's purpose to be learned. Of course, this is related to the interest in learning, which also grows at the beginning of learning. High motivation to learn will make it easier for students to achieve the stated lesson objectives before learning (Billingsley, Thomas, & Webber, 2018).

*Cognitive Skills Development*

Cognitive skills development is the ability to think from remembering to evaluation and creation, which is done by combining several ideas and ideas to solve problems. Student's opinions on developing cognitive skills provided consisted of more positive opinions than negative opinions. The use of the ISM-RTM model provides an opportunity for students to solve problems through reading activities, discussions, understanding the contents of the material read, and classifying the reading contents to conclude a particular topic. This ISM-RTM model's benefits can improve student literacy, problem-solving skills, and ability to gain new knowledge, which has been an issue in previous lessons or even material that has never been discussed at previous meetings.

The use of the ISM-RTM has provided opportunities for every student to be able to practice problem-solving skills. Practicing problem-solving is very important for all students, including students with special needs (Karatas & Baki, 2017). It is hoped that this exercise is a positive step

when they work at an institution after college. Students are expected to provide solutions to problems that occur at work as part of problem-solving. This is related to SSN's opinion:

*"I am ashamed to express opinions in-group members, but now I am given the opportunity even encouraged by friends to be able to give opinions and ideas so that I feel the same as my friends when they express an opinion."*

Both student opinions give an overview that the use of the ISM-RTM provides an opportunity for every student to be active, express opinions and ideas related to problems or questions that must be solved together. Equal opportunity without discrimination and fairness for each group member in expressing opinions can practice problem-solving skills more clearly (Siegel-Hawley & Frankenberg, 2012).

Each student can express opinions or ideas that are processed from various sources to be discussed together in a group forum. Reading activities and expressing their opinions are felt by students to provide many benefits (Rogers & Ardoin, 2018). Among other things, add insight into knowledge, understand the renewability of the source of knowledge from books, journals, and opinions. And can solve problems faced by students related to the subject matter. This benefit can be illustrated by one of the following regular students:

*"I am lazy to read, but with the learning process of this RTM model, I have to read, and it helps me to be diligent in reading. This greatly affects my reading activity."*

The ISM-RTM provides new knowledge from the subject matter being studied and trains problem solving and critical thinking. Through reading activities at the beginning of instruction, students must understand the material, process, and produce opinions following the theory and dynamics of the development of developing science (Molotja & Themane, 2018).

*Social Skills Development*

Social skills describe social interaction both between lecturers and students and between students and students. Student's opinions about developing social skills provided consisted of more positive opinions than negative opinions. Social skills describe social interaction both between lecturers and students and between students and students. Besides, good cooperation between lecturers and students and students and students will improve social skills (Doyle, 2012).

The ISM-RTM provides opportunities for each student to understand the topic being studied through discussion, question and answer, and debate activities. Through the ISM-RTM, starting from the beginning of learning, lecturers have designed learning so that activities are carried out in groups. The information obtained by each group member varies and complements each other.

Some positive opinions of this collaboration, according to students, can hone one another's empathy, mutual respect for opinions and increase learning activity (Yulia Elfrida Yanty Siregar, Rachmadtullah, Pohan, Rasmitadila, & Zulela 2019). In-group activities, selfishness can usually be reduced because there is mutual respect. Even such, selfish feelings of acceptance of opinions are often seen in discussion activities, especially for regular students. In addition to positive opinions, there are negative opinions from collaborative activities carried out by students, such as if they do not agree or disagree with SSNs; it is not uncommon for SSNs to get bullied, especially in the form of verbal expression. This feeling of getting bullied remains when SSNs attend group discussion forums. This opinion can be seen in the opinion of SSNs below:

*"I was a bit worried when my discussion and opinion were not considered. I am afraid of getting bullied by other students. This is because several times, I've felt it."*

The ISM-RTM can train this sense of cooperation through the stages of the learning model. Like the discussion stage, summarize and clarify stages, which provide equal opportunities for each group member to express their opinions. Of course, supervision from the lecturer is required to proceed according to the stages and achievements key in implementing ISM-RTM.

Every step in the ISM-RTM provides opportunities between lecturers and students and students and students in all directions of learning interactions. The interaction of learning in inclusive classrooms is the key to success in learning. Without interaction, lecturers find it difficult to know their achievement or understanding of the material being studied.

In inclusive classrooms where students have diverse characteristics, learning interactions become unique (Rasmitadila, Samsudin, & Prasetyo, 2019). Especially the interaction between regular students and special needs students. The interaction between the two must often use different methods and requires patience for the interaction to take place. For regular students, they should assume that SSNs also get the same opportunities in learning, expressing opinions so that they still get equal rights as other students. The RS must understand the limitations and weaknesses of every SSN so that the attendance and opinions of SSNs are as important as the presence and opinions of the RS.

Differences in characteristics and the diversity of learning styles in inclusive classrooms should be a concern for lecturers. This greatly affects the achievement of all students and the class to understand the material being studied. Interaction in learning is about teachers knowing about the achievement of learning outcomes and understanding what difficulties students face when studying (Harper, 2018).

**Conclusion and Recommendation**

Student opinions about the use of the ISM-RTM positively impacted emotional skills development, cognitive skills, and social skills for all students, including SSNs. Emotional skills development was evident by the growing interest in learning and increased motivation to learn. The development of cognitive skills was shown by the growth of a literacy culture, practice as a problem solver, and increased new knowledge for students related to the topic or material being studied. The development of social skills is shown by the formation of cooperation between students and the occurrence of interactions in learning activities.

The use of the ISM-RTM is very suitable for inclusive classrooms in higher education. The ISM-RTM can accommodate all the needs of students with various characteristics, learning styles, and strengths and weaknesses when implementing learning.

## Conflict of Interest

There is no conflict of interest

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## Acknowledgments

This work was supported by the Ministry of Research, Technology, and Higher Education of the Republic of Indonesia through Grant the Assistance with Special Learning Innovations in Higher Education, 2019.

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