The Interpersonal Intelligence Profile of Seventh-Grade Students in Mathematics Learning

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Abstract. Interpersonal intelligence is one of the intelligences in Gardner’s multiple intelligences. This intelligence is related to respond information, understand information, and build social connections/interactions to others. The purpose of this quantitative descriptive study was to describe the interpersonal intelligence of seventh-grade students in mathematics learning based on communication, empathy, cooperation and conflict resolution aspects. In the present study, data were obtained through the questionnaires. The questionnaires were administered to 210 seventh grade students aged 14 to 15 years old, who were randomly chosen from within private junior high schools of a sub-district in Yogyakarta. The result of this study revealed that 9.52% had interpersonal intelligence with “very high” category, 46.67% had interpersonal intelligence with “high” category, 40% had interpersonal intelligence with “moderate” category, 1.90% had interpersonal intelligence with “low” category and 1.90% had interpersonal intelligence with “very low” category. Therefore, it leads to sum up that the average of interpersonal intelligence of seventh grade students in mathematics learning was in the high category.

1. Introduction
Individual success is not only assigned by knowledge and technical ability but also promoted by soft skills consisting of intrapersonal intelligence and interpersonal intelligence. This is in line with the result of [1], which revealed that 75% of long-term success in workplaces depends on people skills, while only 25% is dependent on technical knowledge. To put it another way, people skills or people smart as the element of interpersonal intelligence [2,3] occupy the largest part of a person’s fruitfulness.

Interpersonal intelligence in Gardner’s multiple intelligence theory among eight intelligences such as visual-spatial, linguistic-verbal, logical-mathematical, bodily-kinesthetic, musical, interpersonal, intrapersonal and naturalistic [4], is defined as the ability to regard and make distinctions among other people, including their moods, temperaments, motivations, and intentions [5]. [6] added that interpersonal intelligence relies on social intelligence—the ability and skills of a person in creating relationships, build relationships and maintain social relations so that both parties are in a win-win situation or mutually beneficial. Similarly, [7] stated that interpersonal intelligence involves the intelligence to understand others and process through interaction with them. In this study,
interpersonal intelligence refers to respond information, understand information, and build social connections/interactions with others. In addition, the focus area of interpersonal intelligence lies on four aspects, including communication, empathy, cooperation and conflict resolution.

Interpersonal intelligence plays a vital role in today’s education, particularly in mathematics learning. Many related studies have indicated that interpersonal intelligence could influence on the success of language learning [8,9], mathematics learning [10,11], nursing [12]. That is to say, interpersonal intelligence obviously gets involved in learning activities. The interaction of students illustrates this point. Students need to interact more with many friends regarded as smarter students, or teachers, to ask for help in solving mathematics problem. Through these interactions, students will be helped to communicate their difficulties in understanding the lessons, in order to be able to accomplish immediately their difficulties. Moreover, it will also allow for the transfer of knowledge between teacher and student or among students and other students. Thus, the well-developed interpersonal intelligence will facilitate students in each the learning activity.

The need to be able to have good interpersonal intelligence is critical for students. Interpersonal intelligence links well with the present day learning objectives of communication and collaboration as well as critical thinking and problem solving [13]. Furthermore, good interpersonal intelligence is necessary for the development of creativity, as outlined by [14] that socialization can make changes and developments toward a person’s creativity. Improving interpersonal skills helps individuals enrich relationships, cope better at social environment and especially when dealing with difficult or challenging individuals as well [15]. Based on the above descriptions, the aim of this study is to describe the interpersonal intelligence of seventh-grade students in mathematics learning, based on communication, empathy, cooperation and conflict resolution aspects.

2. Method
The present study was a quantitative descriptive. It was aimed to describe the interpersonal intelligence of seventh-grade students in mathematics learning, based on communication, empathy, cooperation and conflict resolution aspects. This research was conducted during the second term of 2017/2018 in private junior high schools of a sub-district in Yogyakarta. In this study, the participants were 210 seventh grade students, ranging in age from 14 to 15 years who were randomly chosen. Data were gathered from participants with the questionnaires, then they were asked to indicate responses on a five-point likert scale as follows: 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always. Questionnaire assessment criteria refer to Table 1.

| Type of Statement | Response Score |
|-------------------|----------------|
| Positive statements | Never Rarely Sometimes Often Always |
| Negative statements | 5 4 3 2 1 |

Data analysis of questionnaire was carried out by calculating questionnaire scores, determining the category of measurement result, and classifying the students into several categories. Table 2 was used to determine the category of student’s interpersonal intelligence [16].

| No. | Score Interval (X) | Category |
|-----|-------------------|----------|
| 1   | M_i + 1.5 S_i < X  | Very High|
| 2   | M_i + 0.5 S_i < X ≤ M_i + 1.5 S_i | High |
| 3   | M_i – 0.5 S_i < X ≤ M_i + 0.5 S_i | Moderate |
4 \( M_i - 1.5 S_i < X \leq M_i - 0.5 S_i \) Low

5 \( X \leq M_i - 1.5 S_i \) Very Low

Labels:
X : students’ interpersonal intelligence score in each respondent
M_i : mean score
S_i : standard deviation

3. Result and Discussion

According to the results of calculation, average score of seventh-grade students’ interpersonal intelligence indicator based on each aspect, including communication, empathy, cooperation and conflict resolution are presented from Table 3 to Table 5.

Table 3. Average of Students’ Interpersonal Intelligence Indicator Based on Communication Aspect

| Indicators of Communication Aspect | Average of Indicators |
|-----------------------------------|-----------------------|
| Easy to interact                  | 3.41                  |
| Active listening                  | 3.83                  |
| Persuading/Influencing others     | 2.90                  |
| Open-mindedness                   | 3.70                  |
| Assertiveness                     | 2.88                  |

Table 2 shows the indicator of active listening in communication aspect had highest average score with average score of communication aspect was 3.34. It means that seventh-grade students paid full attention to the teacher’s explanation about the mathematics lessons.

Table 4. Average of Students’ Interpersonal Intelligence Indicator Based on Empathy Aspect

| Indicators of Empathy Aspect      | Average of Indicators |
|-----------------------------------|-----------------------|
| Sensitive towards others feeling  | 3.34                  |
| Giving attention to others        | 3.34                  |
| Understanding the wishes of others| 3.35                  |

In Table 3, the indicator of understanding the wishes of others in empathy aspect had highest average score with average score of empathy aspect was 3.34. It means that seventh-grade students with good comprehension of mathematics lessons would teach their friends who had difficulty in learning mathematics.

Table 5. Average of Students’ Interpersonal Intelligence Indicator Based on Cooperation Aspect

| Indicators of Cooperation Aspect  | Average of Indicators |
|-----------------------------------|-----------------------|
| Participating in team             | 3.67                  |
| Appreciating to team member       | 3.70                  |
| Responsible in team               | 3.40                  |

In Table 4, the indicator of appreciating team member in cooperation aspect had highest average score with average score of cooperation aspect was 3.59. It means that seventh-grade students engaged actively and worked together in discussion, problem solving, and task management.

Table 6. Average of Students’ Interpersonal Intelligence Indicator Based on Conflict Resolution Aspect
Table 6 illustrates the indicator of discussing the problems in conflict resolution aspect had highest average score with average score of conflict resolution aspect is 3.56. It means that seventh-grade students can receive the diversity of opinions and tend to avoid conflict.

Based on Table 2-5, the highest average aspect of all aspects is on cooperation aspect and the lowest average aspects of all aspects are on communication and empathy aspects. It showed that students with high interpersonal prefer to learn and work in group than individual. When working interactively with others, students learn to inquire, hand out ideas, clarify differences, problem-solve, create and build new understandings [17].

Table 7. Students’ Interpersonal Intelligence Category

| No. | Score Interval (X) | Category    | Frequency | Percentage (%) |
|-----|-------------------|-------------|-----------|----------------|
| 1   | 160 < X           | Very High   | 20        | 9.52           |
| 2   | 133.33 < X ≤ 160  | High        | 98        | 46.67          |
| 3   | 106.67 < X ≤ 133.33 | Moderate  | 84        | 40             |
| 4   | 80 < X ≤ 106.67   | Low         | 4         | 1.90           |
| 5   | X ≤ 80            | Very Low    | 4         | 1.90           |

Table 7 demonstrates that there were 20 students (9.52%) had interpersonal intelligence with “Very High” category, 98 students (46.67%) had interpersonal intelligence with “High” category, 84 students (40%) had interpersonal intelligence with “Moderate” category, 4 students (1.90%) had interpersonal intelligence with “Low” category, and 4 students (1.90%) had interpersonal intelligence with “Very Low” category. Therefore, it revealed that the average of interpersonal intelligence of seventh grade student in mathematics learning was in the high category.

The characteristics of students who have high interpersonal intelligence include (1) able to create and maintain social relationship, (2) able to empathize with other people and understand others, (3) able to solve problems in social relationship, (4) able to realize verbal and non-verbal communication, (5) having communication skill [6]. Besides, [10] found that seventh grade students with high interpersonal intelligence are at third level of creative thinking which means that they are creative.

4. Conclusion

Based on the result and discussion, it comes to the conclusion that the average of interpersonal intelligence of the seventh grade student in mathematics learning was on the high category. Of the four aspects of interpersonal intelligence, the highest average aspect was on cooperation aspect and the lowest average aspects were on communication and empathy aspects. The results and findings of this research may be advantageous in giving some insight to the teachers, the educational practitioners, and researchers of the mathematics education field. For instance, use of the appropriate and innovative mathematics teaching-learning models and approaches in terms of students’ interpersonal intelligence, relationship among interpersonal intelligence and other intelligences, relationship among interpersonal intelligence and significant variable in mathematics learning.

5. References

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