CHAPTER V

CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions

It is possible to draw the following conclusions from the research that was conducted in classes X MIA 1 and X MIA 2 at SMA Islam Al Ulum Terpadu Medan during the 2022–2023 academic year, utilizing the Group division in the TAPPS learning model on momentum and impulse materials and the data collected and analyzed:

1. The TAPPS learning model's group division has an impact on students' ability to solve problems in momentum and impulse topic. The one-way ANOVA that was utilized to determine the significant difference in average scores between all pretest and posttest pairs shows the effect.
2. The P-value examined by Corrector I and Corrector II shows that students' problem-solving skills have improved.
   a. Corrector I
      - The p-value in the pretest and posttest is smaller than sig. 0,05 which is near 0,00.
      - And the Bonferroni correction post-hoc test also shows pair 4 has a higher significance of problem-solving ability than pair 3 or pair 2. Pair 3 also has a higher problem-solving ability significance than Pair 2. This is proven by both correctors

   b. Corrector II
      - Then, the P-value in the pretest and posttest is smaller than sig. 0,05 which is near 0,00.
      - And the Bonferroni correction post-hoc test also shows pair 4 has a higher significance of problem-solving ability than pair 3 or pair 2. Pair 3 also has a higher problem-solving ability significance than Pair 2. This is proven by both correctors

   It can be concluded that there is a significant difference and improvement in the average score of the pretest and posttest checked by both Correctors.

3. The TAPPS learning model's group division has an impact on improving students' learning outcomes. As can be shown, the difference between the pretest and posttest final values was ascertained using the n-gain test.
4. The n-Gain exam, which Corrector I and Corrector II administer to each pair group, shows that students' learning results on group division in the TAPPS learning model have improved. Their average problem-solving ability score is used to calculate the pretest and posttest values.

   a. Corrector I

   - n-Gain for first group division (2 pairs) is in the medium category which is 0,40 or 40,27% with a difference in the average pretest and posttest of 22,26
   - n-Gain for the second group division (3 pairs) is in the medium category which is 0,32 or 31,90% with a difference in the average pretest and posttest of 14,93
   - n-Gain for the third group division (4 pairs) is in the medium category which is 0,37 or 37,12% with a difference in the average pretest and posttest of 16,96

   b. Corrector II

   - n-Gain for first group division (2 pairs) is in the medium category which is 0,35 or 35,27% with a difference in the average pretest and posttest of 16,91
   - n-Gain for the second group division (3 pairs) is in the medium category which is 0,32 or 31,90% with a difference in the average pretest and posttest of 14,93
   - n-Gain for the third group division (4 pairs) is in the medium category which is 0,37 or 36,90% with a difference in the average pretest and posttest of 16,50

   It can be concluded that there is an improvement in the average score of the pretest and posttest checked by both Correctors.

5.2 Suggestions

Several suggestions can be made to make this research even better. Suggestions for this or related research are as follows:

1. For Teacher
    - Educators must pay attention to students' abilities if they want to group students the division must be adjusted, such as the ranking of students in class, so that it is hoped that students with high rankings can help their friends who are ranked lower.
    - Teachers also need to be more imaginative when creating questions and different formats for questions that are used as assessment tools. It will be even more beneficial if they ask questions about everyday situations so that teachers can gauge how well the students are using the knowledge they have learnt.
    - Educators must convey that the grades will be divided equally as the average score in the group so that each student will have a sense of responsibility in solving problems together.
2. For students
    - Students are expected to read more information about related materials so that their insight into solving their problems is broader
    - Students must also work together in groups, sharing known information so that they will increase the options for problem-solving in the problems they work on together.
3. For future researchers
    - Other researchers can make more difficult questions so that students' problem-solving skills are more honed so that the n-Gain category will be higher.
    - Other researchers can analyze problems related to students' language skills because, in practice, there are still many students who do not use the language appropriate for EYD and are also not consistent when delivering their answers.