

CHAPTER V

CONCLUSIONS, IMPLICATIONS, RECOMENDATIONS

5.1 Conclusion

Based on the results and discussion presented in the previous chapters, the use of the four-tier tests has yielded valuable information regarding students' conceptions of the topic of reproduction in plants among Class XI students. The analysis revealed that the highest percentage of conceptions, accounting for 48.24% of the responses, occurred at the scientific knowledge level. Additionally, 18.6% of the responses were categorized as false positive, 14.9% as misconception, 9.75% as false negative, and 8.5% as lack of knowledge. The highest level of conception was observed at the scientific knowledge level. Indicating that students demonstrated an understanding of the material. However, it is essential to note that not all students were able to fully grasp the concepts, as some may have still exhibited misconceptions or errors in their understanding. as a result, it may be beneficial for educators to enhance their overall conceptual understanding and critical thinking skills. By proactively addressing misconceptions, educators can ensure that all students have a solid foundation of knowledge and are well-prepared for future learning in the subject area and provide targeted support to ensure a comprehensive understanding among all students. In conclusion, while some students may have exhibited misconceptions or errors in their understanding, addressing these misconceptions through targeted support and creating a supportive learning environment can help ensure a comprehensive understanding among all students.

The second point that can be concluded from this research is misconception experienced by students is considered significant to several concepts. This is evidenced by the average percentage of students' misconceptions about this material above 10%. This research reveals that the most common misconception among students is related to the subtopics of Plant Fertilization and Seed Dispersal. Within the Plant Fertilization sub topic, there are various misconceptions, including the incorrect belief that the crown can deliver the nucleus of the sperm cell to the nucleus of the egg by attaching it to the pistil.

Additionally, students may mistakenly believe that the base of the flower is where the fertilization process occurs and that it divides into two generative cell nuclei. These misconceptions indicate a misunderstanding of the actual processes and functions involved in plant fertilization. It highlights the need for targeted instruction and clarification to correct these misconceptions. Educators can help students develop a more accurate understanding of plant fertilization. Encouraging active participation and providing opportunities for students to ask questions and engage in discussions can further facilitate the correction of these misconceptions.

5.2 Implication

The results of this study carry implications for enhancing students' scientific knowledge and rectifying misconceptions related to plant reproduction, particularly in the sub-topics of plant fertilization and seed dispersal. It underscores the importance of addressing common misconceptions in the classroom and emphasizes the value of engaging students in hands-on activities to reinforce their learning. By addressing misconceptions through targeted instructional strategies, students can build a more accurate and comprehensive understanding of the topic. Engaging them in projects, discussions, practice, and real-life examples helps bridge the gap between what they already know and what they need to learn, promoting a deeper conceptual understanding.

Integrating hands-on activities and real-life applications can make the learning experience more meaningful and relevant for students, enabling them to see how the concepts they learn in class are applicable in the world around them. This active approach fosters a more profound grasp of the material and empowers students to overcome any misunderstandings they may have developed. The study's implications emphasize the significance of employing effective teaching methods that address misconceptions and encourage active learning to promote students' scientific knowledge and understanding of plant reproduction.

5.3 Recommendation

Based on the results of this study, there are several recommendations that can serve as a potential guide for teachers and other researchers. The first recommendation is for teachers to utilize a four-level test to assess their students' conceptual understanding of plant reproduction. Four-level tests can aid teachers in identifying specific aspects of the topic that require more attention, helping to pinpoint areas where students may be struggling with misconceptions. Additionally, four-level tests can be valuable in monitoring students' gradual changes in content knowledge and their understanding of plant reproduction over time. By analyzing test results, teachers can determine whether there are prevalent misconceptions among their students. Based on these findings, they can take corrective actions, such as addressing students' misconceptions directly or enhancing the quality of instruction to fill in any gaps in knowledge. The use of four-level tests allows teachers to gain valuable insights into individual students' learning progress, helping to tailor their instructional approaches to meet the diverse needs of their students. This tailored approach can foster a deeper understanding of plant reproduction concepts among students and support their ongoing learning journey.

For other researchers may not need to conduct misconception research on the topic of plant reproduction because, based on this research, most students have demonstrated understanding of the concepts in the material, reaching the level of scientific knowledge conception. Only a few of them have been identified to hold misconceptions. Therefore, the researcher may suggest that other researchers refrain from further identifying misconceptions on this topic. It is essential for researchers to build on existing knowledge and continuously explore various aspects of student learning to further improve education and enhance conceptual understanding among students. The recommendation is to further explore the effectiveness of four-level tests as an assessment tool for other topics or subjects. By investigating in different educational contexts, researchers can contribute to the development of more comprehensive and adaptable assessment methods that promote effective learning and conceptual understanding.