

## **Appendix E**

Students' Questionnaire Form  
(Teaching and Learning Genetics Questionnaire for  
Disadvantaged High School Students)

**Teaching and Learning Genetics Questionnaire for  
Disadvantaged High School Students**

**Part 1: Student's Information**

1. Gender \_\_\_\_\_

2. Age \_\_\_\_\_

3. What is your level?

☐ Grade 10

☐ Grade 11

☐ Grade 12

4. What is your most favorite subject? Why do you like the subject?

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## Part 2: Teaching and Learning Genetics Information

1. Which level, semester, and academic year that you ever learnt genetics?

Level \_\_\_\_\_  
 Semester \_\_\_\_\_  
 Academic year \_\_\_\_\_

2. From genetic concepts in the table, which one are most difficult, difficult, moderate difficult, or easy for learning genetics. Please identify the level of difficulty in the box which matches with your opinion.

Genetic concepts	Level of Difficulty			
	MD*	D*	M*	E*
1. Genetic Traits				
2. Dominant and Recessive				
3. Homozygous and Heterozygous				
4. Genotype and Phenotype				
5. Law of Segregation and Law of Independent Assortment				
6. Alleles				
7. Multiple Genes or Polygenes				
8. Chromosome				
9. Relationship between Gene and Chromosome				
10. Chemical Structure of DNA				
11. DNA Properties and DNA Synthesis				
12. DNA and RNA in Protein Synthesis				
13. Genetic Codes				
14. DNA in Prokaryote and Eukaryote				
15. Mutation				
16. Genetic Engineering and Applications				

\* MD =Most difficult, D =Difficult, M =Moderate, E =Easy

3. From genetic concepts in table of item 2., please give three examples of the most problem in genetic concepts for teaching and learning (Number 1 means the most difficult) Please identify problems and solving problems in your answers.

Genetic Concept 1:

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Problem:

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Solving Problem:

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Genetic Concept 2:

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Problem:

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Solving Problem:

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Genetic Concept 3:

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Problem:

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Solving Problem:

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## 4. How is teaching and learning genetics in your classroom?

(Please tick ✓ in each box, which have frequency as same as your classroom)

Frequency	All topic	Almost all topic	Some topics	Never
Teaching and Learning				
Teacher demonstration				
Students do report				
Teacher explanation				
Students do project				
Teacher ask questions to let student think				
Teacher and students use CAI				
Student presentation				
Students do experiment				
Teacher set equipments and some students demonstrate				
Students study from information sheets and worksheets				
Role play				
Field trip				
Teacher and student discussion				
Debate				
Problem-based learning				
Expert explanation				
Others (Identify): _____ _____ _____				

5. After learning genetics, how can you use genetics knowledge in your daily lives?

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6. What is/are your suggestion about teaching and learning genetics in the present time?

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😊 Thank You 😊