Evaluation report regarding the use of DLG (gifted programme) 2011-2012

(Biology)

1. Brief summary

In order to support the diversification of NSS Biology Curriculum to cater for students’ needs, the Biology Department applied for the Diversity Learning Grant. The details of the programme are shown below:

Aims:

(a) To provide opportunities for high achievers to develop an in-depth understanding of biotechnology and its application.

(b) To enhance high achieving students’ knowledge and problem-solving skills in an increasing technological society.

(c) To provide enriched opportunities for top Biology students.

Target group:
The top 25 Form 6 Biology Students.

Approved budget:
HK$45,000 for biotechnology teaching and learning equipment and consumables.

Action:
Students attend a series of biotechnology workshops in the school laboratory conducted by the school teachers and completed a Forensic investigation starting from PCR (gene amplification) to electrophoreses in November 2011. They then analyzed the evidence and wrote up a full report of their investigations. The students also learnt the bacterial transformation techniques so as to make the bacteria glow green. Their successful works were also exhibited and demonstrated in the school open in May, 2012.

2. Evaluation methods, data collection and analysis on student learning

Students’ performance in biotechnological investigations, their investigative reports, the in-depth discussion, the exhibitions during school open day and public examinations are used to evaluate their learning.

3. Key findings and recommendations

- Key findings:

(a) Students showed their in-depth understanding of the scientific principal behind all the procedures of biotechnological investigation. They performed smoothly and showed their enthusiasm for conducting the investigation.
(b) Their results and investigative reports were of a high standard which indicated their knowledge in the practical and theoretical aspects of biotechnology and their problem-solving skills were much enhanced. The in-depth discussion of the report and class discussion indicated that their critical thinking, problem-solving skills and decision making skills regarding the ethical use of biotechnology were further enhanced.

(c) Students also demonstrated and explained their exhibits of their works to the public during the school open day.

(d) Four students in this Biology Class obtained 5** and 7 obtained 5*. The result was much above average and this reflects that the strategies for stretching the high achieving students to reach their full potential were useful.

- **Recommendations:**
  To further improve the workshop, more classroom discussions should be conducted to encourage students to understand and make the connection between their research for the vast potential for solving human health, food and environmental problems.

4. **Conclusion**

The aims of the program were achieved. Not only the students gained biotechnological knowledge through this programme, but also their confidence in conducting biotechnological investigations was raised. Last but not the least, some students also started initial research in the field of biotechnology to learn more about the industry and to explore their interests and career goals if they want to specialize within a particular section.