

ANALYSIS OF BIOLOGY EDUCATION STUDENTS' KNOWLEDGE LEVEL ON THE TOPIC OF BIOPRENEURSHIP

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ABSTRACT

The aim of this research is to determine the level of knowledge of biology education students on the topic of Biopreneurship. This research uses a descriptive evaluative method, namely a study method that evaluates objective conditions or what they are in a situation that is the object of study. The analysis used is descriptive qualitative, namely research that accurately describes the nature of an individual, certain circumstances or symptoms so that they can be described thoroughly. Data collection was carried out using several techniques, namely literature studies and field observations. Biontrepreneurship is the integration of biological sciences with business sciences which involves all aspects of living things. Biopreneurship is defined as the use of living things that can be processed into business products and can be marketed, resulting in a productive economy. Seeing the importance of Biopreneurship, interdisciplinary learning began to be carried out. This is done so that students are able to combine their knowledge to apply it to solve various problems in the real world. The results of the analysis show that biology education students' knowledge on the topic of Biopreneurship is in the high category with a score of 82. Based on the level of Biopreneurship knowledge which is categorized as high, it is estimated that students will be able to design good Biopreneurship products.

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INTRODUCTION

Biopreneurship comes from the words biology and entrepreneurship. Entrepreneurship is defined as a field that can create new jobs. So it is not only beneficial for yourself but can also provide employment opportunities for the surrounding community. Biopreneurship learning requires knowledge from various scientific disciplines (interdisciplinary sciences) that influence each other.

At this time entrepreneurship has been introduced at various levels of education. So that students can be introduced from an early age to how entrepreneurship works. This can be seen from the inclusion of the entrepreneurship theme in P5 (Strengthening Pancasila Student Profile Project). Currently entrepreneurial practices are carried out by schools at various levels of education for example by holding market days.

Rosyidi et al (2023) The development of entrepreneurial literacy is crucial for students to prepare themselves to benefit from the current development. Through this research, it is hoped that a project-based science module can be designed that focuses on biopreneurship to increase students entrepreneurial literacy activities. At the university level at State University of Medan there are courses available to internalize entrepreneurial values. In the biology department there are Biopreneurship courses in the biology study program and entrepreneurship courses in the biology education study program.

Aqil et al (2020) The difficulty of entering the workforce requires the world of education to change the paradigm of thinking students from job-seeking cultures become entrepreneurs (job creators). Several aspects of entrepreneurship such as mindset and actions. This is what we want to introduce to students. In Biopreneurship there are biological elements that will be designed to increase the value of entrepreneurship. Apart from bioentrepreneurship, there are several other terms such as sociopreneurship and technopreneurship.

Brown and Kant (2009) stated that one of the important areas in people's lives is the economic sector. Because economic movements can move various other sectors. So society must be stimulated to be able to analyze dynamic economic movements. So students' learning must be

equipped with Biopreneurship courses. In the Biopreneurship material, various things will be discussed that will support the implementation of Biopreneurship.

The aim of this research is to measure biology education students' knowledge of biopreneurship material. Learning about biopreneurship is expected to enable students to analyze all opportunities in the community. So that biopreneurship can create future benefits both for itself and create job opportunities for the community. Therefore, this article aims to discuss the level of knowledge of biology education students on the topic of biopreneurship.

RESEARCH METHOD

This research uses a descriptive evaluative method, namely a study method that evaluates objective conditions or what they are in a situation that is the object of study. This research was carried out on Biology Education students at State University of Medan. State University of Medan is located on Jalan William Iskandar Pasar V, Kenangan Baru, Percut Sei Tuan District, Deli Serdang Regency. The population of this study were biology education students with a purposive sampling technique.

Data was collected using several techniques, namely literature study and field observation. Literature study is a collection of literature related to similar research. Field observations were carried out regarding whether there was a Biopreneurship course, whether Biology education students understood Biopreneurship, whether Biology education students were able to produce capable Biopreneurship.

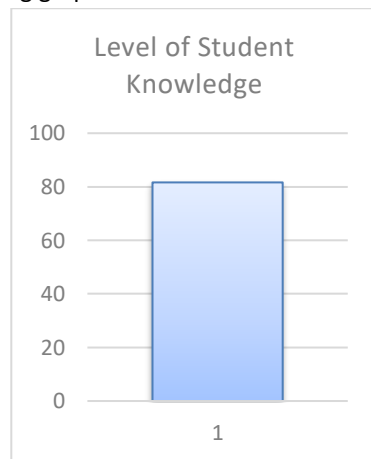
The following is the work flow in this research, starting with observation, then carrying out a test to determine students knowledge regarding Biopreneurship. During its development, counseling will be provided regarding Biopreneurship. Next research, students will be asked to design a Biopreneurship product and present it. Next, the product will be assessed by colleagues and a team of experts to obtain data.

RESULT AND DISCUSSION

Table 1. The Score of Test

Student's Initials	Score	Student's Initials	Score
1	90	29	76
2	95	30	76
3	90	31	90
4	71	32	90
5	52	33	81
6	62	34	100
7	76	35	90
8	52	36	95
9	95	37	90
10	90	38	81
11	90	39	62
12	76	40	62
13	76	41	81
14	90	42	52
15	90	43	95
16	81	44	90
17	100	45	90
18	90	46	76
19	95	47	76
20	90	48	86
21	71	49	90
22	52	50	81
23	62	51	100
24	76	52	90
25	57	53	95
26	100	54	90
27	90	55	71
28	90	56	52

Based on the test scores, it can be depicted as the following graph



Picture 1. Graph of Test Score

From the analysis, table 1 shows data from the test results. The statements on the test include the following points

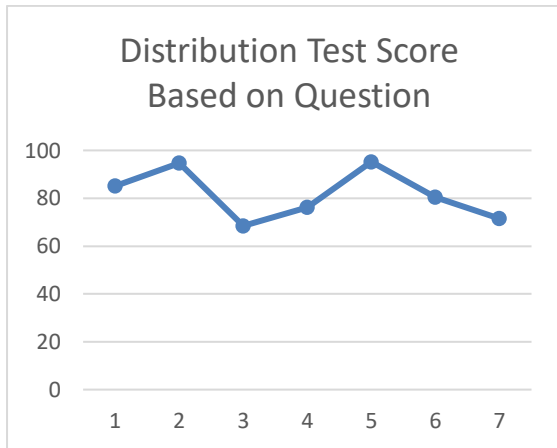
1. Student gain a lot of knowledge about Biopreneurship from Biopreneurship education on campus.
2. Biopreneurship practice is needed to provide experience as well as motivation.

3. Student often attend seminars on Biopreneurship.
4. Student participation in the seminar will motivate student to become a Biopreneurship
5. Student participation in the seminar helped student understanding of Biopreneurship
6. Students are interested in becoming a Bioentrepreneur
7. Students are running a Biopreneurship business.

Table 2. Analisis Score of Test

	P 1	P 2	P 3	P 4	P 5	P 6	P 7	Rata-rata
1	3	3	2	3	3	3	2	90
2	3	3	2	3	3	3	3	95
3	3	3	2	3	3	3	2	90
4	3	3	1	1	3	3	1	71
5	1	2	1	1	3	2	1	52
6	1	3	3	1	3	1	1	62
7	2	3	2	2	3	2	2	76
8	1	3	1	1	3	1	1	52
9	3	3	2	3	3	3	3	95
10	3	3	2	3	3	3	2	90
11	3	3	2	3	3	3	2	90
12	3	3	2	2	2	2	2	76
13	3	3	2	2	2	2	2	76
14	3	3	2	3	3	2	3	90
15	3	3	2	2	3	3	3	90
16	2	3	2	2	3	2	3	81
17	3	3	3	3	3	3	3	100
18	3	3	2	3	3	3	2	90
19	3	3	2	3	3	3	3	95
20	3	3	2	3	3	3	2	90
21	3	3	1	1	3	3	1	71
22	1	2	1	1	3	2	1	52
23	1	3	3	1	3	1	1	62
24	2	3	2	2	3	2	2	76
25	1	3	1	2	3	1	1	57
26	3	3	3	3	3	3	3	100
27	3	3	2	3	3	2	3	90
28	3	3	2	3	3	3	2	90
29	3	2	3	2	2	2	2	76
30	3	2	3	2	2	2	2	76
31	3	3	2	3	3	2	3	90
32	3	3	2	2	3	3	3	90
33	2	3	2	3	2	2	3	81
34	3	3	3	3	3	3	3	100
35	3	3	3	2	3	3	2	90
36	3	3	2	3	3	3	3	95
37	3	3	2	3	3	3	2	90
38	3	3	2	2	3	2	2	81
39	1	2	2	2	3	2	1	62
40	2	2	3	1	3	1	1	62
41	3	3	2	2	3	2	2	81
42	1	3	1	1	3	1	1	52
43	3	2	3	3	3	3	3	95
44	3	3	2	3	3	3	2	90
45	3	3	2	3	3	3	2	90
46	3	3	2	2	2	2	2	76
47	3	3	2	2	2	2	2	76
48	2	3	2	3	3	2	3	86
49	3	3	2	2	3	3	3	90

50	2	3	2	2	3	2	3	81
51	3	3	3	3	3	3	3	100
52	3	3	2	3	3	3	2	90
53	3	3	2	3	3	3	3	95
54	3	2	3	3	3	3	2	90
55	3	3	1	1	2	3	2	71
56	1	2	1	1	3	2	1	52
	85	95	68	76	95	80	71	



The results of data analysis show that average knowledge about Biopreneurship is worth 82 which is classified in the high category. Based on data, it is known that the highest achievement with an average score of 95 was obtained in point 2 regarding Biopreneurship practices needed to provide experience as well as motivation and point 5 regarding Student participation in the seminar helped student understanding of Biopreneurship.

The lowest achievement with an average score of 68 was obtained in point 3 regarding students often attending seminars on Biopreneurship. The 1st point regarding student knowledge about Biopreneurship is mostly obtained from Biopreneurship education on campus with an average score of 85. The 4th point regarding student participation in the seminar can motivate students to become Biopreneurship with an average score of 76.

The 5th point regarding student participation in seminars can help students' understanding of Biopreneurship with an average score of 96. The 6th point concerns students interested in becoming a Bioentrepreneur with an average score of 80. The 7th point concerns currently running a Biopreneurship business with an average score of 71. Based on the average score of students, the highest test scores were obtained by students from

17th, 26th, 34th and 51st students with an average score of 100.

Meanwhile, the lowest average score was 52 by the 5th, 8th, 22nd, 42nd, 56th students.

CONCLUSION

Based on the research results, it is known that initial knowledge of Biopreneurship is in the good category with a score of 82. This shows that students have adequate initial knowledge in Biopreneurship knowledge. Lecturers can act as mentors and facilitators in directing students to design Biopreneurship products. Students' knowledge of Biopreneurship is not just for making products. In Biopreneurship learning, students learn various things, including being observant in seeing product opportunities needed to solve problems of needs in society, opening employment opportunities as a form of community empowerment effort, modifying existing products to improve product functions and increasing critical thinking to face the dynamics of diversity in social life in society.

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