

PROFESSIONAL COMPETENCY OF BIOLOGICAL EDUCATION STUDENTS IN THE IMPLEMENTATION OF GUIDED TEACHING

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ABSTRACT

This study aims to determine the perception of biology tutors on the professional competence of biology students in the implementation of guided teaching at SMA Negeri Medan T.A 2019/2020. This type of research is descriptive research. The population in this study was 14 people (3 men, 11 women) biology tutors at SMA Negeri in Medan City. The sample used in this study was 14 biology tutors, who were taken by total sampling. The instrument used in this research is a questionnaire. Questionnaires were used to collect data on the perception of biology tutors on the professional competence of biology students in the implementation of guided teaching. The results of this study indicate that the perception of biology tutors on the ability to master the material is 79%, open lessons 81%, ask 78%, carry out variations in learning 80%, ability in clarity and presentation of material 85%, managing class 84%, closing lessons 81% and adjust between time and subject matter 85%. Overall, the perception of civil servant teachers on the professional competence of biology students is very good (81.62%).

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INTRODUCTION

Each university develops the Higher Education Curriculum regarding the Indonesian National Qualifications Framework. The implementation of internships in schools is one of the programs that have been implemented and is an application of the Indonesian National Qualifications Curriculum at the State University of Medan. Internship courses are held three times, namely Apprentice 1 (school observation) held in the second semester, Internship 2 (Development of Learning Devices) held in the fourth semester, Internship 3 (Guided Teaching) held in the sixth semester ([Gultom, 2018](#)).

The progress of a nation depends on the quality of its human resources. Quality education produces the quality of human resources, and teachers are the critical success factors. Teachers are a determining factor for the success of education. The Educational Personnel Education Institute has the task of preparing professional teachers, educators of the nation's future generations. A teacher is a professional position that provides expert services and demands academic, pedagogical, social, and professional skills requirements ([Bhakti & Ika, 2016](#)).

As one of the Educational Personnel Education Institutions that produces qualified teacher candidates in their respective fields of study and especially in carrying out learning, Medan State University continues to strive to improve the quality of its graduates so that they can compete and meet the demands of jobs in the current era of globalization. The implementation of the Guided Teaching course is one of the efforts made to provide experience for prospective teachers by guiding students and observing the implementation of learning by tutors. The requirements of participants for the implementation of the Guided Teaching course are that they have completed 60 credits, a GPA of 2.0, and have been declared to have passed the Internship II course (Development of Learning Devices) and courses required by the study program. The total time for internship courses is 170 minutes x 16 meetings ([Gultom, 2018](#)).

Students carry out the implementation of Guided Teaching as prospective teachers are expected to be able to apply knowledge, skills, attitudes, and in the end, will gain teaching experience before actually becoming a professional teacher. In this activity, there is an interaction between student-teacher candidates and students, tutor teachers, and all components where students conduct guided teaching. According to the Law on Teachers and Lecturers, a teacher is said to be competent if he masters four

basic competencies: pedagogic competence, personality competence, social competence, and professional competence. As a prospective teacher who carries out PPL in schools, a student must master these four competencies.

As prospective teachers, ideal students must have a set of knowledge, attitudes, and skills to support the achievement of mastery of personality, social, pedagogic, and professional competencies. Although efforts have been made to improve the quality of students, in reality, there are still some shortcomings. As a teacher with these competencies, the attitudes and behavior of students carrying out should become examples and role models for students to be interested and severe in studying with students ([Widiyastutik, 2013](#)).

Professional competencies possessed by prospective teachers or students of guided practice/teaching are the ability to master the material, the ability to open lessons, the ability to ask questions, the ability to carry out variations in learning, the ability to clarify and present material, the ability to manage classes, the ability to close lessons, and the ability to adjust between time and subject matter ([Field Experience Practice Unit, 2013](#)). Field experience practices are all curricular activities that practical students must carry out, as training to apply the theory obtained from previous semesters, following the requirements set so that they gain experience and field skills regarding the implementation of education and teaching at partner schools. It is the same with students who carry out guided teaching according to the requirements, namely having completed 60 credits, GPA of 2.0, and having been declared to have passed the Internship II course (Development of Learning Devices) and courses required by the study program.

Social competence possessed by prospective teachers or students of PPL or guided teaching is an open and flexible attitude of students to students, managing behavioral interactions in the classroom, communicating with students, communicating with tutors, communicating with teachers at school, communicating with education staff, communicate with fellow guided teaching participants, communicate with school leaders (Nugrahenni, 2011). Field Experience Practice (PPL) is the same as implementing guided teaching courses or teaching practices in schools. In this activity, there is an interaction between student-teacher candidates and students, tutor teachers, and all components where students carry out guided teaching or field experience practice.

Biology education students who will become teacher candidates are required to make their

students learn and are also required to teach for themselves. Students are required to practice their ability to plan learning activities in Learning Implementation Plans (RPP), implement them, and monitor changes in students (Simatupang, 2018).

The implementation of guided teaching is expected to be able to apply knowledge, skills, attitudes, and in the end, will gain teaching experience before becoming a professional teacher. PPL is intended to form professional teachers or education personnel through school training activities (Siti, 2010). Excellent and effective microteaching can improve students' ability to teach in schools during PPL implementation. On the other hand, microteaching, whose application is not effective, will reduce students' abilities because if students never practice, PPL will be awkward and lack confidence (Ninik, 2007).

Based on the results of interviews with several biology tutors about the competencies possessed by biology students in the implementation of guided teaching, the competencies they have are still lacking. The competence of biology students in planning is still not maximized, namely in making Learning Implementation Plans (RPP) where the methods and models used are sometimes not in accordance with the material presented, the students are not ready to teach guided in preparing the material to be delivered to students in class, the students are not ready. Guided teaching in preparing learning media that will support the achievement of the teaching and learning process.

Based on the description above, it is imperative to know the perception of civil servant teachers on the professional competence of biology students in the implementation of guided teaching. Supervision and monitoring of students by tutor teachers can be used as input to improve

the teaching ability of biology students in the implementation of guided teaching.

METHOD

The type of research used is descriptive, which will describe the views of the biology tutors on the professional competence of biology students in the implementation of guided teaching in public high schools throughout the city of Medan T.A. 2019/2020. The population in this study was 14 biology tutors in the implementation of guided teaching in public high schools throughout Medan T.A 2019/2020. The sample used in this study was 14 biology tutors, taken by total sampling. The research instrument used for data collection is a questionnaire. Questionnaires were used to collect data on the perception of biology tutors on the professional competence of biology students in the implementation of guided teaching. The data were analyzed using descriptive analysis techniques by calculating the percentage with the formula according to Riduwan (2015).

$$P = \frac{F}{N} \times 100\%$$

To find out the perception of biology tutors on the professional and social competencies of supervised biology students, each indicator used the formula in Sugiyono (2017).

$$NP = \frac{\text{score}}{\text{ideal score}} \times 100\%$$

RESULTS AND DISCUSSION

The tutor teacher's assessment of the professional competence of biology students in the implementation of guided teaching showed in Table 1.

Table 1. Teacher's Assessment of Student Professional Competence

No	Indicator	N item	Teacher's assessment (%)			
			4	3	2	1
1	Material mastery ability	3	33, 33	52,33	12	2, 33
2	Ability to open lessons	4	27	69,50	3, 50	0
3	Ability to ask	2	25, 50	60,50	14	0
4	Ability to carry out a variety of learning	2	32, 50	60,50	3, 50	3, 50
5	Ability in clarity and presentation of material	3	45, 30	47,70	7	0
6	Ability to manage class	1	36	64	0	0
7	Ability to close lessons	2	43	39,50	17, 50	0
8	Ability to adjust between time and subject matter	3	52, 30	36	11, 70	0
Total		20	294,93	430,03	69,20	5, 83
Average		-	36,86	53,75	8, 65	0, 72

Overall, the perception of civil servant teachers on the professional competence of biology students in the implementation of guided teaching for each indicator is obtained from the data in table 2.

Table 2. Teacher's Perception of Student Professional Competence for Each Indicator

No	Indicator	N Item	Teacher's assessment			
			score	Ideal score	(%)	Criteria
1	Material mastery ability	3	133	168	79	Well
2	Ability to open lessons	4	181	224	81	Very good
3	Ability to ask	2	87	112	78	Well
4	Ability to carry out a variety of learning	2	90	112	80	Well
5	Ability in clarity and presentation of material	3	142	168	85	Very good
6	Ability to manage class	1	47	56	84	Very good
7	Ability to close lessons	2	91	112	81	Very good
8	Ability to adjust between time and subject matter	3	143	168	85	Very good
Total		20	914	1120	653	-
Average		-	-	-	81,62	Very good

The teacher's perception of the competence of biology students in mastering the subject matter being taught, providing answers to students' questions during teaching and learning activities, and conveying learning objectives to students at the beginning of learning is "good" (79%). Students who are currently in the 6th semester of guided teaching have previously received courses related to the subject matter of biology. The courses that have been obtained include systems biology, environmental biology, plant morphology, the taxonomy of invertebrate animals, the taxonomy of lower organisms, cell biology, plant anatomy, the taxonomy of vertebrate animals, the taxonomy of Spermatophyta, genetics, animal structure, plant ecology, animal ecology, and microbiology. The courses above are under most of the biology material in SMA/MA class X, class XI, and some classes XII. In addition to the courses mentioned above, students have also practiced applying the competence to explain biology material in the form of microlearning in microteaching courses. [Nurlaila \(2009\)](#) says that micro-teaching is done by training prospective teachers in teaching some parts of the subject matter or skill with predetermined limits and usually also providing boundaries for students consisting of fellow prospective teachers who practice it.

Biology tutors' perception of the ability to open lessons for biology students in the implementation of guided teaching is "very good" (81%), where this competence includes the competence of biology students in providing apperception as an introduction to attract students' attention, explaining biology lesson material first, opening learning by providing motivation, reviewing the material from the

previous meeting. Before carrying out supervised teaching, biology students have received courses including educational psychology, school observation internships, teaching and learning strategies, and exercises to apply eight teacher competencies in Teaching and Learning Activities (KBM) in the form of microlearning in microteaching courses. Microteaching includes several basic teaching skills, namely asking questions, giving reinforcement, conducting variations, the ability to explain, open and close lessons, guide group discussions, manage classes, and teach well ([Asril, 2013](#)).

The perception of the civil servant teacher on the indicator of the ability to ask biology students in the implementation of guided teaching is "good" (78%). The ability to ask questions on this professional competence includes the competence of biology students in giving time to think every time they ask questions and provide explanations about the truth of students' answers. The civil servant teacher's perception was that biology students in the previous semester had practiced this questioning ability in microlearning (microteaching courses). The ability to ask questions is one of the eight teacher competencies in KBM trained in microteaching courses. Microteaching exercises are very useful in determining the success or failure of the prospective teacher and his position as a teacher in the future ([Saputri et al., 2013](#)).

The perception of civil servant teachers on indicators of the ability of biology students to carry out learning variations, including using different learning methods and utilizing appropriate learning media according to the material being taught, is "good." The ability of these students is due to the fact that in addition to having obtained

courses related to biology material, students have also obtained knowledge of variations in learning methods in teaching and learning strategies courses and in biology learning planning courses which study the creation and use of learning media of various teaching planner models and train them in lectures microteaching. Teacher candidate students must be able to use variations in teaching such as emphasizing certain parts that are considered important, sauntering towards students while maintaining eye contact so that students do not feel bored ([Azizah & Elvi, 2019](#)). [Pinasti \(2008\)](#) factors that affect learning effectiveness include using methods, media, and learning strategies used.

The perception of civil servant teachers on indicators of clarity and presentation of the material is "very good" (85%). These competencies include the ability of biology students to convey subject matter, provide explanations of subject matter with examples that are applied in everyday life, and deliver the subject matter to students in sequence and coherently. The ability of these students is because students have obtained most of the material in the field of biology studies, have also acquired knowledge about strategies or learning methods in teaching and learning strategies courses, and have been trained in microteaching lectures. [Harini \(2010\)](#) states that improving students' teaching competence is to apply one of the innovative learning models. In this case, is the role-play learning model, where students are conditioned in certain situations as if they are a teacher who is giving subject matter in front of the class, so there is a learning experience for students to be confident when they have to teach in front of the class.

Students as prospective teachers must explain because explaining is an essential part of learning carried out by teachers. Explaining is one of the most critical aspects of teacher activities in their interactions with students in the classroom ([Azizah & Elvi, 2019](#)). The need for explaining skills to be mastered by the teacher is increasing meaningful explanation for students, the ability to manage the level of student understanding, not all students can explore their knowledge from books or other sources, so an explanation from the teacher is needed, the lack of available sources that students in learning can use. Therefore teachers need to provide verbal information in explanations related to the material ([Usman, 2009](#)).

The teacher's perception of the class management ability indicator, namely the ability of biology students to create a conducive learning environment so that students can learn calmly and

comfortably in the learning process, is "very good" (84%). The ability of biology students is also due to students having practiced managing classes in biology learning planning courses, namely studying learning system development, classroom management, and being trained in microteaching courses in the previous semester. The ability to manage classes is one of the competencies of teachers in KBM who are trained in microteaching courses. In microteaching, basic teaching skills are taught so that students or prospective teachers are no longer awkward to teach in real schools. So that good and effective microteaching can improve students' ability to teach in schools during the implementation of PPL II ([Widiarini, 2015](#)).

The teacher's perception of the indicator of the ability to close the lesson consists of the competence of biology students in reviewing the subject matter that has been taught and guiding students to conclude that the subject matter is "very good" (81%). This ability has also been trained in biology students in microteaching courses in the previous semester. Biology students have carried out exercises to apply eight teacher competencies in Teaching and Learning Activities (KBM) in the form of microlearning in microteaching courses.

The perception of the civil servant teacher on the indicator of the ability to adjust the time and subject matter of biology students during the implementation of guided teaching is "very good" (85%). This ability includes the competence of biology students in starting and ending learning on time according to lesson hours and dividing learning time according to the subject matter. This ability is related to the knowledge of allocating time for the materials to be taught in KBM. This knowledge was obtained in the previous semester in the curriculum review and biology lesson planning courses. In this course, knowledge and skills are obtained to make annual programs and semester programs and implement them into lesson plans. In addition, biology students have received internship courses on the development of learning tools. Just like the previous seven abilities that students practice these competencies in microteaching learning.

In line with [Afidah and Rima \(2018\)](#), curriculum review courses play an essential role in creating prospective student educators who can carry out their duties well, designing learning tools, and being responsible for their duties and functions as educators. The above reviews strongly underlie that biology tutors' perception of the professional competence of biology students in the implementation of guided teaching internships is very good (81.62%).

The results of this study are in line with [Novalita's research \(2014\)](#) which states that the formation of teacher professional competence requires the integration of theoretical approaches and work practices, the integration of objectives, teaching materials, work methods, media, and teaching technology and teaching resources efficiently. The lesson plan is a series of activities that are arranged in such a way for implementation learning. Planning, in this case, means preparing teaching materials, using media, using teaching approaches and methods, and assessing in a time allocation to achieve professional competence.

Overall, the perception of civil servant teachers on the indicators of professional competence of biology students in the implementation of guided teaching is very good. This is very reasonable because the eight indicators have been obtained by biology students in previous courses and have been trained in microteaching courses. [Sohibun et al. \(2017\)](#) stated that microteaching could be interpreted as practicing teacher teaching skills or teaching practices in a small/limited scope. So it can be understood that microteaching is a reduced teaching model or also called authentic teaching. In the microteaching course, students are directed to become teachers who can master the subject matter, manage classes, understand competency standards and basic competencies to design appropriate learning plans, and achieve the desired goals.

CONCLUSION

The perception of biology teachers on the professional competence of biology students in the implementation of guided teaching at public schools in Medan 2019/2020 is included in the very good category (81.62%) seen from the ability to master the material (79%), the ability to open lessons (81%), the ability to ask questions (78%), the ability to carry out variations in learning (80%), the ability to clarify and present material (85%), the ability to manage the class (84%), the ability to close the lesson (81%) and the ability to adjust between time and subject matter (85%).

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