

Works About the Formative Assessment of Biological Subjects and Its Implementation Methods

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ABSTRACT

This article hands us information about formative assessment in biological class's subjects. So, we conducted a research about it. Formative assessment is not a sort of the assessment in which students are given the score or they are graded by, but it used to engage the students in high qualitative and elite learning. It actually happens while the lecturer is teaching. So, it doesn't have a specific time. The Formative assessment can easily be applied through four popular methods: 1- The method of asking questions, 2- The method of giving feedback on students' work, 3- self-rectification, 4- Using the pre-test for learning. The teachers can carry the formative assessment through these methods in biological subject's class in order to be get the accurate learning in the students.

KEYWORDS

formative assessment; traditional assessment; methods; calibre and teaching.

INTRODUCTION

In this Article teachers have been evinced the importance and vitality of applying the formative assessment. accordingly, the four methods: 1- The method of asking the question, 2- the method of giving feedback on students' work, 3- Self-rectification, 4- Using the pre-test for learning have been researched for the implementation of formative assessment.

Most of the biology teachers are not applying the formative assessment methods while teaching into the play, and they are not realized from the learning process of students. So, I got it crucial to expound the formative assessment alongside its methods to the teachers to turn out well-recognized with them and capitalize them in their lectures classes. As implementing methods of the traditional assessment conduces good learning environment for the students. So, the vitality of this research is that I explained the formative assessment and its methods in straight forward and plain way. Consequently, acting on this sort of the formative assessment methods, teachers' teaching and students' learning will be positively impacted

RESEARCH METHODS

It provides a part of theory research' descriptive method (Review articles). In this article we have gotten. Relevant information from various sources such as books, websites and other trusted articles and illustrated for better and easy learning.

RESULTS AND DISCUSSION

When we heard the word of assessment our ears, our meditation and cognition considers the following terms.

1. Students will be scored
2. At the end students will be given the appreciated letters
3. It will be used to find out the ability of students, class grading and all levels of related areas of education all over the country

By the view of experts, the above mentioned aims are applied in traditional assessments, but this article is used for another aim of learning by which students achieves better learning, so it's called formative assessment (Black et. al 2003).

Table 1. Differences between the above two types mentioned of assessments are as follow.

| Traditional assessment | Formative assessment |
|--|---|
| <ul style="list-style-type: none"> • Has the framework of exam and is performed formally. • It is a separated part of teaching and learning processes. • It is applicable according the time table. • Tutors are just monitoring the classes, having bit or part, He /She may not participate at all. • It is chiefly applied for the learning's range and gradation. | <ul style="list-style-type: none"> • Usually it has got the informal framework. • It has done during the learning and teaching process. • It can be carried out by teachers' own approaches and methods. • It is carried out for affective learning activities and perceptions. |

The Impact of Carrying out the Formative Assessment

Why we carry throughout the formative assessment? It has answered, Black et. al 2003, such as bellow:

- When formative assessment takes place the students' scores of post-test are increasing.
- Learning and teaching tasks are accurately going ahead. Our aim here is not doing the hard work but smart work.
- Step by step changes are emerging. Don't take a long walking step at night/darkness.
- Teachers are obtaining interest in teaching, and it becomes content full and satisfactory for them because it is one of the compatible technique in his teaching spans.
- Furthermore, students are getting the interest in learning as well, and that's why they are tackling and controlling the cognition and comprehension of their studies.

Normally, when formative assessment is applied; the following principles are being taken into account;

- Purpose of learning
- Current situation/ capacity of the students
- Those techniques, strategies and methods by which students achieves to their goal.

As far as the formative assessment is applied in teaching; the assessment has been carried out through following four methods;

1. Asking the question during teaching
2. Giving feedback on students' work
3. Self and peer assessment
4. Pre-test is exploited

Questioning

Asking the question is one of the vital and professional tasks. As pointed out, using the oral questions in terms of teaching may be capitalized as using the social assessment for evaluating capacity of the students, or will assist them in their learning (worthy et al, 2012). Teachers must provide kinds of questions which would assist students in their learning. Beside of this, teachers must incite students to pose the various sorts of questions in order to puzzle out those predicaments that students have them in their studies. Questions are asked in order to have the questions asked in a qualitative manner and provide a portable circumference of profitable debate. So, questions' doctrines have to be explicit and definite in terms of assessment (Hattie,2008).

Waiting Time

This time begins at end of the teacher's question and at the beginning of students' answer. According to (Rowe, 1974) as a research has taken the place in United States of America and shows that teacher at the schools were asking a question from the students. If they didn't answer the question, so, the teacher was directly asking another question. Resultantly, time space between the two questions was being recorded about (0.9) of a second. Provided that the question time will have been mitigated; so, its damage will be (that students will not be able to contribute in the question-answer process). On the other hand, if the question time will have gone up, it will have the following benefits as Rowe, 1974 stated that:

- Long answers are coming into the wash.
- Fear of answering is mitigated.
- Questions are responded with dare.
- Students are complaining on other students' answers or evincing their agreement through the students' answers.
- Different clarities are provided.

Clarification of Question

In formative assessment, the questions should not be responded by yes-no (short answers). The questions have to be answered in a compatible way which can open the door of learning process for the students. A question should look for the properties; by which the students can debate and comment on each other's questions.

The students ought to be asked by going after the following tenets:

- What do you think of Ahmad's answer?
- What can we add to Mahmoud's answer?
- Ahmad says.... but Mahmoud says.... How can we set all of that on one point?

There are also some other points to be added to these techniques. The question has to be explicit and putting heed to its impression. Short question has got to be posed or students ought to be given the opportunities to discuss and exchange their ideas about that question. Consequently, the teacher will be able to define the capacity level of the students (Mary Hanafin, 2007).

Questions have to be asked in order to extend various comments of the students. It is better to take the following points into consideration:

- An advantageous and significant question ought to be asked that can enhance the learning graph and level of the students.
- Waiting time ought to be increased in which the students can be given the opportunity of thinking about a question. Identically, every single student has to be expected to participate in debate/discussion or in answering the question. In the long run all the



accurate and inaccurate answers can be capitalized in enhancing the students' ability and learning process.

- Afterwards, the activities have to be provided in that manner where students can extend their learning and capacity meaningfully.

Marking Feedback on Students' work

Alongside Questioning, we also have one more method by which the formative assessment will be carried out well as well. Generally, when students are doing an activity for the first time, they are mistaking there. As indicated by (Wigginton, 2008), when instructor is giving comments on students work it is called feedback.

Giving feedback on the students' work could be done by three ways: 1- by giving score to the students 2- by commenting on students' work and 3- by carrying through both commenting students' work and scoring students.

According to Butler (1988) recounted, in order to spring up good and professional learning strategies; it can be implemented well by commenting on students' works. He says, "in terms of giving comments on students' work, two things have to be considered: first, comment should be given to those students which know well. Next, this can lead students to their coming goals.

When students have been given just the scores, they will put heed to the following negative points:

- Students are barely thinking about themselves, and not working on the given assignment. As a result, they are contemplating comparing themselves with others, but this idea is extracting from their mind how to distil on their learning task.
- Students are just paying attention to their calibre, and they are forgetting about their exact activities and tasks which conduces lack of self-confidence in other students. Perverted to that, if the feed backing will have occurred just through the commentating so:
- All the students are finding this perception that they can surpass in their learning process by themselves.
- Students are coming up with a sort of the idea that their success and promotion that concern to their competition with other students, but combine to the implementation of their works. Students' work mustn't be commented the way where the goal of student's work is not explicit.

Some instances of these kinds of comments are: (Great! applause! answer all the questions! finish your task! draw the figures through the pencil!). Through these sorts of the feedbacks, students will not understand how much they learnt because teachers didn't conspicuously to tell them how much have you learnt. In formative assessment, students have to be clearly told what are your goals and how to achieve them.

Kluger and Denise's (1996) got to this result, "giving feedback on the students' works result in that time when students will comprehend the instructions of their success clearly in the process of feedback-giving".

Examples of these sorts of the feedbacks are: "you have drawn epic shape of the items and compounds, and they have been wonderfully contradicted, furthermore, you have to provide some more details about their various functions as well, you gave pretty well comment to the rule of explanation, Think! Is this rule applied in every triangle, you, guys used two subtracted numbers quite good? Now, you also have to check out the plus number alongside them number's category". Generally, the following points have to be considered in conceivability.

- Giving feedback or questioning must induce the students towards the sensitivity in order to look for their crucial learning points.
- Commentary should show what has been carried out, and what has to be carried out; so, to reach their goals.
- Time of application of commentary has to be determined by instructor and opportunities ought to be triggered and planned for the learning process.

Peer and Self-Assessment

A Peer Assessment

Peer-assessment may be used for the social assessment in that time. When the students are utterly accustomed with peer-assessment, but normally, peer-assessment is used for the joint-assessment in order for the students to comment, assess and evaluate each other's works.

Peer-assessment is perfect for self-assessment, or peer-assessment is the pre-competency for self-assessment (Yang, KO, & Chung, 2005). When peer-assessment is implemented by students for their peers. So, it will have the following positive advantages (Black et al., 2003):

- When the students will have been put posted that your homework's will be checked by your peers then a rare number of students may have detected not to do their homework's; moreover, all students are doing it. So, students are doing their assignments in a very accurate manner, and they are trying to have the very correct answer found; if not, they are trying to get it.
- Deliberate understanding takes place. The language and terms which are exploited by the students can convey very conspicuous meaning of what answers the students have achieved in midst of them. Moreover, instead of the teachers deploring, they handle and distil on each other's deploring seriously.
- Teachers are putting heed to students' opinion really comprehensively. Student's desires and suggestions are paid more attention when they are checking each other's homework's. Eventually, relation and communication between students and teachers are enhanced.
- In peer-assessment, teachers' job will be space easy, students will recognise the needs of their learning, and will show their needs to their tutors.
- When students are going to be busy in their peer-assessment activity. So, teachers will be monitoring and observing the class and tasks going on. In backlash, teachers can be able to monitor the class, and give them insinuations.

Students' learning turns out fruitful in that circumstance when students are to concentrate on other student's (Homework's, assignments, classwork and etc.). Here, commentator is getting the job done as a teacher, assistant and mentor or observer. Self and peer-assessment emerges in that time when teacher is going to assist with students especially with weak students in order to strengthen the assessment skills. Trainers must train students: how to assess other students, and how to hand in feedbacks on each other's works, besides, how to monitor each other. Teacher ought to divide the class in groups, and trace some talented students as their leaders, and tell them how to check out each other's homework's, how to hand feedbacks on each other's works, and how to comment each other's works (Topping, 2010).

Self-Assessment

Students cannot get to their goal till they are not going to get across these two points: 1- what is the aim of my study. 2- What has to be done by me? In order to reach to my learning' purpose. Thus, self-assessment is one of the crucial approaches of getting something learnt.

One of the strenuous task in the self-assessment is to think about reaching to his/her goal of learning. Because through this approach, students are taking their responsibility and tackling the learning process. Teachers must evince to their students (what is our mission and target and specific learning activity, and how can they get to that mission / goal?). By self-assessment students are getting gotten across how much they know, and meanwhile what is my accountability (Black, 2003).

Self-assessment is complaining and commenting on your own work. In other words, self-assessment is: when students thinking about their work, and considering what has accurately been done, and what is needed to be done, and they are packing out special goals for themselves latter on (Andrade & Valet chevalier, 2009).

Self-assessment is a sort of the fundamental process of getting the students gotten to their future assignments, and motivates students in their future works. It persuades students to do their tasks by themselves, and stocks them up with self-confidence and trust (Zimmerman & Schunk, 2011).

For self-assessment, three other procedures have to be considered as well:

1. Packing a target out for carrying out a task. Goal selects the way of activity of a person. The person who has got the evidential goal; he/she do everything under the Base of that goal. Finally, he/she succeeds in their goal. The person feels so calm. Owing to that teacher or students should clarify targets of their learning.
2. Monitoring your success through your goals, students are carrying out the works which have been handed to them over, and comparing their works with traced standards, checking out their feeble and strong points, and working through their planning of success.
3. (Rectification and changes) this is the process in which the students are rectifying their works, and they stipulate to bring some changes in that. In this position, the students should understand or content it that rectifying or bringing changes in your work has got the meaning of having ability in your subject, and it is assisting him in terms fetching good score (Haqyar, 2016).

As well as, we have to consider the following points in order to have the affective assessment:

1. Students must have a clear method and some standards for their learning level; in order to compare their purpose and the work done by them. Following some sort of the methods and techniques may be somehow complicated, then it can comprehend in conspicuous instances and narrative practices.
2. Students has to be taught about helping habits. It has two advantages: a- it empowers human's personal values, and b- it empowers those talents of a student which is used in the self-assessment.
3. Students have to be enticed to keep the purposes of their works in their mind. Furthermore, he/she should assess their development in their learning goals. Your peers can be able to get a heed his work prosperously, and in the result, he could carry out his work pretty independently.

Eventually, self-assessment and peer-assessment helps students pretty much in their learning and can precede their tasks professionally.

Using the Post Test for Learning

Using the former test for learning helps students to keep tabs on the weak points, and exploit them for accurate learning in the future. First, we keep our eyes on the difficult points for the sake of test. When a question is asked from the students, then they are getting themselves

ready for the exam. Actually, their plan will be to restudy and revise the book. In repetition, all topics are not needed to be revised.

They must focus on the former test-papers or former issues, and they are supposed to revise those issues which they were weak in. Here, they have to use the highlighters (red, green and yellow colours). That is to say, the issues ought to be segregated in three categories: 1- which they know. 2- Which they know the average of. 3- Which they have the problem in (Gurney, 2010).

Secondly, they have to make the questions and try to answer them. Whenever students will have been given task, then they try to make the questions and answer them: 1- their assessment's calibre escalates and goes over and over higher. 2- They are trying to learn more lessons. 3- Checking the questions of former test and working on that. When test is finished, then students are thinking back about the questions which have not been answered. So, teachers are answering those questions in the classroom, and capitalising them in the classroom for learning. Teachers should answer those questions which have not been answered by students (Black et. all, 2003).

Beside the above-mentioned methods, former test can also be used as the social assessment. Accordingly, teacher is compiling the questions and giving them to their students for responses, and students are responding to those questions. When students answer their questions, then teachers are handing the answers back to the students and telling them to compare the answers with the note/lecture/ book. Then they are trying their level best to check the incorrect answers. Afterwards, the instructor writes answer to their wrong-answered questions and students are observing their weak points and reforming them for the next test. Subsequently, instructor takes another example after a couple of days, this time content of the questions ought to be contrary (Coil, 2005).

CONCLUSION

Formative assessment which leads students to the qualitative learning can be carried through a number of special methods that can keep the process running well are:

- **Asking the questions:** those questions have to be asked which can conduce good learning calibre in students and tempts them to keep thinking about their work.
- **Giving comments on the students' works:** this process ought to be implemented in two ways: checking out of what has been learnt, and what has to be learnt.
- **Self-assessment and peer-assessment:** by perusing this method, students are enticed to do their works charismatically. In this method, teachers have to direct their students and show them the understandable standards. Through self-assessment method, students are getting the independency of their tasks, students are tracing their goals and following them, and working on them to be rectified and changed if needed.
- **Pre-test:** has to be exploited by the teachers, not only to check students' level of learning, but also apply it in upgrading their learning abilities.

At the end suggested teachers to keep in mind rectification assessment in their learning institutes to lead the students for comprehensive learning process to keeping them active. Many of the teachers are keeping the pre-test concealed from students. In fact, teachers must keep the students in touch with their pre-test orderly to rectify their weak points. Formative assessment has to be applied in classes, because the demands of twenty first century are to be changed from teacher centre to student centre learning style and using active methods for better achievements.

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