

## **Integration General Education Model In General Compulsory Subject and Sugarcane Agribusiness Management Subject Based SINGULARWEBINAR**

Setyo Budi, Harianto, P., and Prihatiningrum, A. E.  
Muhammadiyah University of Gresik, Sumatera Street No. 101 Gresik Kota  
Baru, Randu Agung, Gresik, Indonesia, 61121. Email:  
setyobudi.prof@yahoo.co.id

### **Abstract:**

*University learning system right now showed that most of students study conceptually by learning exist theories. Students become more focus on scientific aspect and they cannot optimize opportunity for implementing what they learnt in the class directly. As a result, most of students have less ability to build and grow up their characters, in the form of cultural values including honesty, humanity, and also leadership. General education is one of learning models of sustainable integration developed in general compulsory subject which covers character development value and Sugarcane Agribusiness Management Subject. The objective and target of General Education model is produce good human, especially for young generation which competent in their own scientific field by implementing learning method of integration general compulsory subject and sugarcane agribusiness management using SINGULARWEBINAR system which can give assessment certainty of students' activities accurately, transparently, and accountably based on some values including humanity, leadership, communication, IT skills, Analytical Thinking, Creative Thinking, Logical Thinking, Art Science, and Global Culture. The results of the general education based SINGULARWEBINAR on line system can enrich the knowledge and also can accelerate the growth and development of management which is transparent, accountable with the easy management and can be used for all sugar industries generally in Indonesia.*

**Keywords:** *general education, general compulsory subject, sugarcane agribusiness management subject, SINGULARWEBINAR*

### **INTRODUCTION**

Competence of students in the future is very strategic and a necessity, because there was globalization among nations in the world, such as Asia, Europe, Africa, America and Australia. Sugarcane Management Agribusiness subject is one of local specific excellence subjects in Agro Technology Major, Faculty of Agriculture, Muhammadiyah University of Gresik with 5 number of credits in a semester.

Learning system on Sugarcane Management Agribusiness subject currently shows that most of students study conceptually by learning the existing theories and lack the opportunity to implement directly what they have learnt in the class. Not only that, Sugarcane Management Agribusiness subject is also more focus on the scientific aspects, so that students are less able to form and develop the characters in the form of cultural value on themselves, such as the value of honesty, humanity, leadership and management.

Relate to this condition and fact, then Sugarcane Management Agribusiness subject in the future plans the teaching and learning process directed more focused on theory and practice in order to make students able to understand, explore, and implement how the way cultivation of sugarcane by using good and right technical culture both in theoretically and practically at the field and be able to develop the character in the form of cultural value which should be on themselves, such as the value of honesty, humanity and leadership. Model of online learning in higher education has been become a challenge

for educators to deal with the assumption that teaching and learning process in higher education is growing time by time. Higher education is challenged to fulfill the demand of students' connectivity, the growing expectations and demands for the learning experience with high quality results, remember that there are some evidences that Internet information and communication technologies are changing a lot of people in terms of technological transformation (Garrison & Kanuka; 2004).

To achieve these objectives, so the lecturer of the subject and the researches attempt to implement General Education model by integrating general compulsory subject and Sugarcane Management Agribusiness subject based SINGULARWEBINAR. Basic use of the SINGULAR system is this management system has all the features or indicators of sugarcane cultivation which have already registered as a Copyright in Indonesian Ministry of Justice and Human Rights No.C00201602094 dated June 3, 2016.

SINGULARWEBINAR system is designed by integrating all growth indicators until sugarcane harvest management in on line system. Then, this system is also implemented in Sugarcane Management Agribusiness subject and general compulsory subject. From this, the outcomes are expected that it can resolve all the fundamental and crucial problems relate to the quality of sugarcane raw material for sugarcane cultivation in Indonesia. This system is expected to be a future national policy to be implemented and will be strengthened by set of tools of yield determination which is effective and efficient. Then, in the level of teaching and learning process, the outcome is students are expected to improve the knowledge, skills and character of each students. Similarly, this system can be developed on other commodity crops and can be combined to other subjects that become local specific excellence subject in a major.

## **METHOD**

SINGULARWEBINAR system is a future learning model that integrates the general compulsory subject and Sugarcane Management Agribusiness subject with the aim of making the students able to implement the theories given in the form of practice in the field which based on the value of humanity, leadership, communication, IT skills , Analytical Thinking, Creative Thinking, Logical Thinking, Art Science, and ASEAN / Global Culture.

In the era of modernization such as this, the use of integrated IT becomes a major priority and has become a demand. Model integration between general compulsory subject and Sugarcane Management Agribusiness subject is done by collaborating between two programs, namely WEBINAR and SINGULAR for being SINGULARWEBINAR learning system which are very potential to be *developed*. SINGULARWEBINAR system designs students able to understand the lesson easily and can explore the material in real practice and also able to form and develop character and cultural value within each of themselves, whether in the society, nation or state.

## **PARTICIPANTS**

The implementation of SINGULARWEBINAR system in the learning process will be held on the second semester of academic year 2017/2018. The implementation of this model involves the lecturer of general compulsory subject and courses and Sugarcane Management Agribusiness subject. The Preparation of the implementation has been already begun of the first semester of 2017/2018.

## **Implementation Technique**

The implementation technique of integration between general compulsory subject and courses and Sugarcane Management Agribusiness subject based

SINGULARWEBINAR system will be done by well preparation and also supported by professional and responsible resources. All of the materials including the books, textbook, handouts, laboratory, experimental gardens, land Pilot Project and the support technologies device-based on line system should be available.

Integration of these subjects is done with learning based classical and practical work in the garden experiment, students who previously had received material about the Sugarcane Management Agribusiness subject need to practice their knowledge straight into the garden, observing, analyzing the growth and others. Then the students do the assignments given by lecturer and they directly open applications "SINGULAR" that has been prepared, filled out the questionnaires in the application without need to be monitored directly, lecturers will see and identify the work of students in the online application "SINGULAR" in which there are data that has been entered by the student, so it will be known whether these students do practical work correctly or they just entering the data to the application without doing practical work properly. The implementation of SINGULARWEBINAR system can be used as a control and assessment tool. This system will be more effective and efficient if its implementation is more unified and it can be done on different time from the learning schedule. Students will be more happy and relaxed with optimal results. The results of the data input can be obtained dual purposes: 1). Lecturers can assess intellectual ability of technical mastery about Sugarcane Management Agribusiness subject and 2). Lecturers can also assess whether these students have noble values such as honesty, leadership and others.

The design of development of General Education with a model integrating the general compulsory subjects and Sugarcane Management Agribusiness subject is teaching methods by using SINGULARWEBINAR system which is combination between the two systems, namely SINGULAR and WEBINAR program. The scope of SINGULARWEBINAR system in detail can be explained as follows:

a. WEBINAR: Web Base Seminar

A web-based learning environment needs involvement of technology elements. It is because the majority of learning activities conducted via computer. Availability and easy access to the learning environment, as a web-based learning environment that is effective have to support anytime and anywhere for learning (Salmon, 2004).

Muhammadiyah University of Gresik in recent years makes the learning process to the students of the internet-based, it can not be separated from the nature of the Internet which is able to connect between each human despite great distances apart. With the ease of communication between people via the internet, so, it makes us easier to do some kind of jobs, including teaching process (McLeod, Raymond & Schell; 2008).

Muhammadiyah University of Gresik seeks to develop some standards of learning process in which all of those will be combined into a single learning. Some standards of learning process are:

1. Placement learning materials on the website in the form of PPT files, PDF or audio-visual recording.
2. The process of learning is face to face, like a conventional classroom but in this learning, during learning process will be recorded and it will be uploaded on the website. Then, if it is possible, it will be done a *live streaming*, so it can be followed by all students through the website.
3. *Teleconference* is the process of direct interaction between several people over an Internet connection. In the development, there were some of terms that appear, such as *Webinars*, *Virtual Classes* And *Online Classes*.

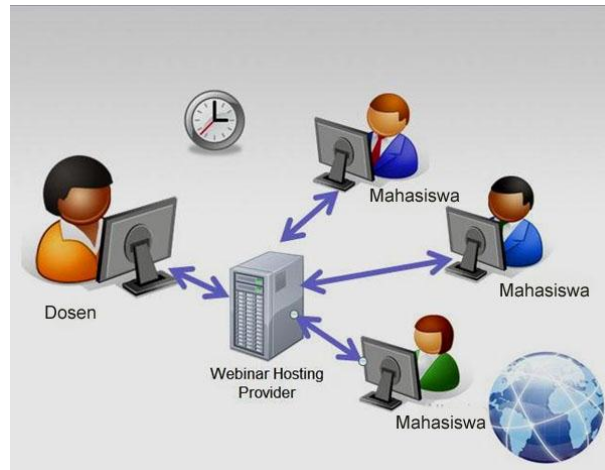


Figure 1. Simulation the Use of Webinar Hosting Provider In Learning Systems

b. SINGULAR: Integrated Management Information System of Sugar Industry Based Planting Planning And Cutting Transports of Sugarcane

Based on Budi and Harianto (2015), specifications SINGULAR (Integrated Management Information System of Sugar Industry Based Planting Planning And Cutting Transports of Sugarcane (*Saccharum officinarum L.*)) are as follows:

1. The availability of the farmers database and its overlay planting area in each certain period;
2. The availability data of planting time period which considers when is harvest and milling time period based on milling machine capacity installed in sugar factory;
3. There is certainty information for farmers about planting time period;
4. There is certainty information and guidance for farmers about maintenance procedures,
5. Providing information that can map the most optimal harvest time based on each variety, location and demand of raw materials for Sugar Factory;
6. There is certainty information for farmers and Sugar Factories about harvest time period;
7. Openness in determining the individual yield of sugarcane, so it can increase the trust of sugarcane farmers to the management of sugar factory in terms of the determination of the individual yield of sugarcane;
8. Data of the sugarcane yield can be accessed anywhere without having to come to a sugar factory;
9. Providing information about sugarcane weight estimation which can be produced in certain locations and at certain periods.
10. Providing information about sugarcane crystal estimation which can be produced in certain locations and at certain periods.
11. Providing information in the form of data dashboard which is needed for Sugar Factory that can be used as the basis for decision-making related to raw material milled at a certain period, such as information on the land total ready for harvest, lands ready for harvest which is already have cutting and how many left of the land that have not cutting in a overlay area.
12. Providing information of sugarcane tracking transport from the land to the sugar factory, so it can monitor the certainty of harvested sugarcane at the land which



delivered to the sugar factory, and can be used as data to determine additional compensation of transport costs per vehicle and the distance from the land to the factory.

13. Minimize the violations, because there is open access to information which has been closed for farmers and other stakeholders. It is because this application can be accessed easily by everyone using android application.
14. Knowing early information about the availability of raw materials which associated to installed capacity of each Sugar Factory. More detailed simulation SINGULAR use can be seen in Figure 2.



Figure 2. Simulation of Use SINGULAR

Based on the system that has been already designed and created, then each program is WEBINAR and SINGULAR, they have different features with each function, so that both programs are very suitable for collaborating and using in learning system. Collaboration of both programs can be called as the *SINGULARWEBINAR*. For more details, regarding the flow of use SINGULARWEBINAR in the learning system can be understood and operationalized comprehensively as shown in Figure 3.



Figure 3. Flow Implementation of The Usage SINGULARWEBINAR System

## IMPLEMENTATION

Learning system based SINGULARWEBINAR system is almost definitely has a lot of obstacles and barriers, because it involves technology, the same vision, mission, goals, culture and cost. Remembering that the substance problem of sugar industry based sugarcane in Indonesia has already become very basic and crucial, thus the implementation will be done gradually. Similarly, the implementation in the learning process is still focused on the integration of general compulsory subject and Sugarcane Management Agribusiness subject.

Implementation of General Education model, especially in integrating learning between general compulsory subject and Sugarcane Management Agribusiness subject are considered to be very rational and spiritual worth. Integrating general compulsory subject and Sugarcane Management Agribusiness subject would be a solution that fundamental, strategic, precise and attractive in order to achieve learning targets that should be achieved in accordance with their competence. Not only that, it also achieve the lofty goals as part of the sovereignty and the personality of the Indonesian nation. Integration of some subjects with SINGULARWEBINAR system designed that each student has their own competence and also learning targets that must be achieved. By integrating both of them, certainly it becomes very good in the development of General Education in order to create competent students in their field and also have a value of humanity, leadership, communication, IT skills, Analytical Thinking, Creative Thinking, Logical Thinking, Art Science, and Global Culture.

General Compulsory Subject provides knowledge and strength in universal cultural values such as honesty, leadership, humanity, and others which are very influential in shaping the character of the students. Sugarcane Management Agribusiness subject provides knowledge and deep material both in theory and practice about how to cultivate sugarcane crops based on good and right technical culture. The final result that will be achieved by the students who join in this integrated subject is each student will be able to develop their competence in everyday life which is prosperous and thrive.

Essentially, substance of Sugarcane Management Agribusiness subject will produce younger generations which are able to be leader in sub-sector sugar industry based sugarcane. Young generations who become sugarcane farmers in the future should have universal cultural values such as honesty, humanity and leadership in sugarcane cultivation based good and right technical culture in order to obtain satisfactory result and incomes and also be prosperous justice. In achieving these results, so the sugarcane farmers must be honest in fulfilling the needs of the sugarcane plant, if the plants need fertilizer up to 300 kg, the farmers have to be honest to provide appropriate size needed by the plant in order to get good plant growth and the productivity is also high. Farmers also need to have the leadership to organize the cultivation management in order to be going well. Farmers also need to have a sense of humanity to the plants, giving love to take care of plants. The cultural value would be formed and deepened in the general compulsory subject, so integrating learning between general compulsory subject and Sugarcane Management Agribusiness Subject is rational to be implemented so that the student is expected to become sugarcane farmers who have a good character and cultural values.

In the future, it is expected that the national sugar industry increasingly strong and resilient with regard to the online SINGULARWEBINAR management system that can ensure transparency, accountable, sustainable and equitable. One of the problems that has been resolved is yield determination, so that sugarcane farmers become more spirit in doing sugarcane cultivation based good and right technique culture (Budi, 2016). As a result, the interest of young generation to serve in the sugar industry sector increasingly stretched and has an impact on self-esteem, pride, and also guarantee the prosperous.

## RESULTS

Implementation of General Education in College is expected can make students be able to compete in each field and also have cultural values, so that the students in the future were able to become sugarcane farmers who are honest, dignified, wise and competent in accordance with the vision and mission of the Muhammadiyah University of Gresik, that is to establish and develop the soul of Islamic entrepreneurship.

By the implementation of the on line system of SINGULARWEBINAR, it is expected that students can accelerate in understanding and deepening the substance of the subject material and have potential skill and expert based on their competence. In a broader level, SINGULARWEBINAR online system incorporates a set of tools such as core sampler function whose results are accurate and very efficient. So, it will add further modern science knowledge and useful in helping to resolve the fundamental and crucial problems in the sugar industry. Basic and crucial problem is sugarcane cultivation which is done by sugarcane farmers do not appropriate with good and right technical culture. More ironic, there is lack of transparency in the determination of the sugarcane yield (Budi, et al 2015)

Indonesian sugar production per hectare currently is quite low, ranging from 5.6 ton / hectare, while the sugar production in the world is more than 10 tons / hectare. Indonesian sugar production is only produced approximately 2.3 million tons of sugar from an area of approximately 550,000 hectares, while the necessity of national sugar is about 6 million tons, so that the sugar production is still less than 3.6 million tons.

The government always decide to import sugar in order to fulfill the needs of national sugar. How ironic it was, Indonesia should be able to export sugar. Indonesia always proud of the culture of sugar imports. It has been realistic decision to import sugar when there no choice in fulfilling the less of national of sugar productivity. This condition and fact should be used as a historic moment that actually, Indonesia is able for being self-sufficient in sugar. The problem is on Indonesian people themselves. The research results of individuals or groups and even through specific pilot project for

farmers and institutions shows productivity per hectare can reach up to 10 tons of crystal.

Seeing these facts, it needs some efforts to resolve this problem in a systematic, structured, measurable, and sustainable. One of strategic efforts is making students as young generation of the nation be able to improve national sugar productivity by implementing sugarcane cultivation with good and right culture techniques. Therefore, the implementation of the General Education with a model of integration between the general compulsory subject and Sugarcane Management Agribusiness subject is the right solution in achieving the target outcomes which is expected by implementing of General Education in Indonesia.

## **DISCUSSION**

Integrating the implementation of General Education in general compulsory subjects and Sugarcane Management Agribusiness subject based SINGULARWEBINAR is very potential and wide open to be developed at the College and also High School Education. It is because that program which has been designed and created can be used for general and also can be implemented for all courses or subjects. To accelerate and realize its implementation, the initial stage was performed in a model of learning in the form of pilot project course which is done by the researchers, Pilot project course in the scope of study program as a follow-up, socialization and consolidation implementation in the scope of the University of Muhammadiyah Gresik, and continued up toward Integration SINGULARWEBINAR program with automation systems of learning outcomes evaluation assessment.

The problems and obstacles that occur in the implementation SINGULARWEBINAR online system should be used as the spirit for the improvement of this system. This is important, because the success of this system is very meritorious and useful to the nation and state of Indonesia, especially to increase the sugarcane productivity and increase the prosperous and self-esteem through a sovereign nation based sugar industry. So this system will always be improved and extended in order to be able for solving the basic and crucial problems in the sugar industry, especially in Indonesia (Budi; 2013), (Budi; 2014) and (Budi; 2015).

The success of General Education in integrating general compulsory subjects and Sugarcane Management Agribusiness subject based SINGULARWEBINAR which conducted at Muhammadiyah University of Gresik is expected to be developed for all educational levels, both College and High School Education through government policy, in this case refers to the Directorate of Education, Directorate General Education and Student Affairs, the Ministry of Research, Technology and Higher Education of the Republic of Indonesia.

Sugar in economic, social, cultural, political, health and food has been become a necessity and even under emergency conditions can affect to the inflation. So, this is condition when the government's responsibility is staked. It is because until 2016, the availability of national sugar is still imported. The certainty fulfillment of national sugar necessity is still far from the domestic sugar production. Policies issued was not able to increase productivity. On the contrary, productivity tends decline year by year. The existence of the SINGULARWEBINAR online system incorporates a set of tools as core sampler function is expected to accelerate productivity per hectare above 10 tons. One of the last best hope is in the young generation who are still sensible, smart and competent in the industrial sector-based sugarcane (Budi; 2013), (Budi; 2014) and (Budi; 2015).

## **CONCLUSION**

1. General education based SINGULARWEBINAR on line system will be held on general compulsory subject and Sugarcane Management Agribusiness subject integrated directly in the sugarcane cultivation as a Pilot Project. It is expected that the results are good and can be developed in other academic subjects or lessons at the vocational high school or senior high school.
2. The results of the general education based SINGULARWEBINAR on line system can enrich the science, knowledge and also can accelerate the growth and development of management which is transparent, accountable with the easy management and can be used general for all sugar industries, especially in Indonesia.
3. By the existence of general education based SINGULARWEBINAR online system incorporates a set of tools that accurately and efficiently as core sampler function, it will accelerate the completion of distrust of the majority of sugarcane farmers in determining sugarcane yield which has always been become a fundamental and crucial issue.

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