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The Integration of Innovation in Education Technology to Improve The Quality of Website Learning in Industrial Revolution Era 4.0 Using Waterfall Method

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Abstract: The integration of educational technology is one of the necessary ways to improve the competence of qualified graduates. This study aims to create an integration of website learning model to improve the quality of students. The Current Study Provided does not indicate the incorporation of existing websites so that students are less aware of the benefits of this lesson. The Participants of this study were lecturers, undergraduate and postgraduate students and educational practitioners throughout Indonesia using online form. Methods Data collection used is direct interview and online survey and needs analysis using waterfall method. The results obtained show the merging of learning that will lead to the needs in the industry era 4.0. This study resulted in a complete innovative learning incorporation as required by Policy Makers

1. Introduction

Along with the development of existing information technology, the world of education should also make innovations in learning to produce learning needed by stakeholders for example making learning instrument based on website [1]. Globalization has made changes in many sectors. Each change demands higher product quality and higher service. The high demands cannot be avoided by people who work in commercial enterprise and industry and also by people who exercise in other sectors, such as university administrators. Ace of the needs faced by university administrators is to enhance a performance which creates a learning procedure which will yield graduates who are able to fill the

needs of this historic period. This immense challenge requires changes in leadership, learning capacity, creativity, and innovative capability in all the components of the university[2]. In the era of industrial revolution, Firms need to open up their boundaries to attain valuable knowledge from external partners because external partners can support their innovation activities by providing knowledge and resources[3].

Further integration of existing learning at universities can utilize information technology through social media based website, as an easy tool in collaboration of other subjects. Technology Acceptance Model (TAM) was the ground of the proposed model used in 470 the current study and that involved seven constructs: perceived 471 usefulness, perceived enjoyment, and perceived ease of use, 472 social media use, collaborative learning, students' satisfaction 473 and learners' performance. An online questionnaire with 41 474 items was used to measure these constructs and was analyzed 475 using structural equation modeling (SEM) technique[4] Collaboration The science especially in developing the quality of the subjects is very necessary because it can see a wider view angle. An investigation into the collaboration efforts being made between the agricultural education and mathematics departments was also included. to integration of mathematics that emerged through interviews with the five agricultural education instructors who were identified as having high self-reported levels of mathematics integration in their courses[5]In addition, there are new initiatives in the form of three Centres of Expertise (on Climate Change, Water, and Animal Disease Outbreaks) and two Strategic Partnerships (on Animal Science Excellence, and Food and Drink Science). These five new initiatives are collaborations between the research institute sector (RESAS's Main Research Providers, the MRPs) and the university sector (Scotland's Higher Education Institutes), allowing staff in both sectors to contribute to supporting key areas of policy development (through the Centres of Expertise) and key areas of the economy with high growth potential (through the Strategic Partnerships).[6]. The purpose of this study is to be able to combine the standard of competence that the industry needs into the university so that existing alumni can work and apply entrepreneurship. There has been limited use of the detail of integration of learning. The Present study will provide guidance for universities to have the necessary knowledge in integrating learning and learning integration models, integration of instructional innovations to be presented in the form of theory and practice.

2. Method

Pattern Cooperation between Universities and Industries ever designed by government through ABG Community is an academic business government community. This pattern, when applied appropriately by universities, carried out openly by the industry and has the full support of the government, it is not impossible to achieve quality education with sufficient resources to meet the needs of the industry, thus reducing unemployment. Knowledge collaboration is the primary method of increasing the virtual community of practice's knowledge ability and achieving the core competency advantage of sustainable growth. Knowledge collaboration inevitably involves the psychological elements of the collaborators [7] Effectively responding to the current and dynamic construction labour market requirements is a major responsibility of higher education institutions (HEIs). HEIs aim to reduce the mismatch between what they deliver and what is required by the industry[8].
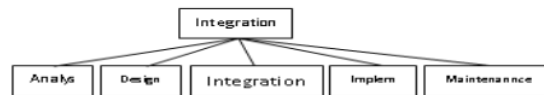

Figure. 1. Integration In Waterfall Method

In short the steps that need to be done are:
1. Higher Education curriculum designing that suits the needs of Industry.

2. The Party of Industry shall give academic freedom in the form of cooperation on the part of the College to try to apply the theory obtained.
3. The Government can provide support in the form of policy between Universities and Industry.
4. ABG comm. This can be done continuously in the form of MoU so that each party has their own duties and responsibilities.
5. Each side will provide a positive advantage in the development of skills and knowledge.

Waterfall method generally has the following stages: 1) Requirements analysis and definition a Service system for viewing constraints, and objectives defined by the results of consultations with users which are then defined in detail and serve as system specifications within the website.[9] 2) System and software design. [10] Stages of system design that allocate good system requirements hardware and software by forming a complete system architecture. The design of software involves the identification and depiction of the basic software system and its relationships. 3) Implementation and unit testing.[11] At this stage, the design of the software is realized as a series of programs or program units. Testing involves verifying that each unit meets its specifications, all device components used in both hardware and software. 4) Integration and system testing. Individual units of the program or program are combined and tested as a complete system to ascertain whether or not the software requirements match. After the test, the software can be sent to the customer, in this process is a continuation of the previous work, all the work of the device is activated. 5) Operation and maintenance, this stage is the longest stage. The system is installed and used substantially. Maintenance involves rectifying errors not found in the previous stages, improving the performance implementation of the system unit, and improving system services as new requirements [12]. Methods of data collection using the online survey form. Data obtained is a proposal design learning required.
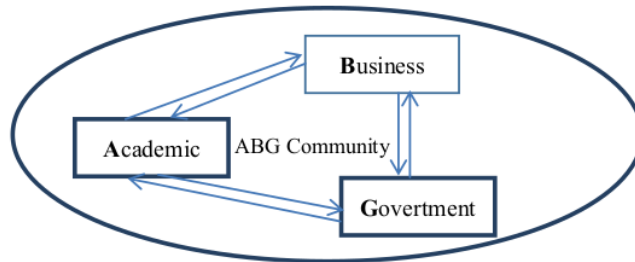
3. Result

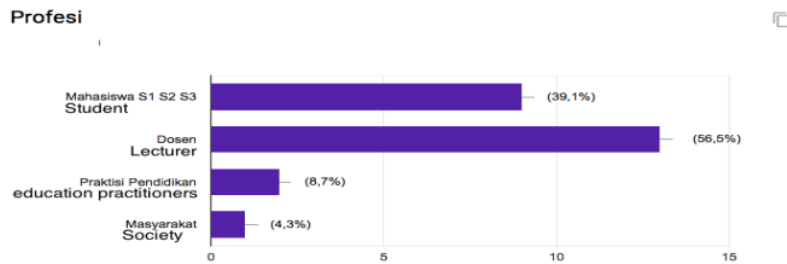**Figure 2.** Design Integration of Industrial Academy and Government

Figure 3. Respondent's Profession involved

Any University that wants to have a quality that can be directly utilized by the industry and the government would require support and cooperation from outside campus.

Table 1. . The Importance of University Integration with Industry and Government

Study Program	Profession	Reasons for Integration
D3 Hiperkes and Safety	Lecturer	The complexity of work, so it needs to work with other fields.
Educational technology	Under and postgraduate students	Appropriate development of information technology
Public Administration	Lecturer	If you want to apply Learning integration in Improving the Quality of Teaching and Learning, must be supported with adequate facilities, without adequate facilities, it is not possible a learning process will be implemented properly
Society	Practitioners	Learning integration (learning updates) through what ?, you did not mention the specific integration of learning companion variables in improving the quality of learning that I think is broad enough.
		if the intended integration of learning related to the design, development, utilization, research and evaluation. Certainly "Integration of learning" is necessary.
		Through understanding the planning and development of learning and teaching quality will be better,
		through the use of technology and learning resources to increase student participation and activeness,
		through the research and evaluation of various learning delivery strategy strategies not only affect the student achievement but improve the professionalism of teachers.
		But in integrating it all, it needs individual teacher commitment. They should at least have competence: (1) good pedagogical understanding; (2) instructional designer; (3) as a learner teacher; and (4) capable of reflection and revision.
Law	Lecturer	Because integrity is a compulsory capital for a teacher / lecturer. Integrity is an example that a lecturer should give. When the lecturer brought the material of honesty then the lecturer also had to give an example by doing honest.

4. Discussion

All the respondents recorded showed the same opinion in a thought for the need to collaborate with relevant stakeholders to improve quality, increase alumni experience, build relationships and cooperation. The integration of learning using the website is something that becomes a major requirement in the digital era and industry needs. In realizing it the government plays an important role in providing policy in the form of regulations that require the industry to accept students who will perform the process of learning directly.

5. Conclussion
Integration of Learning with the Industry and Government for an educational institution is an absolute obligation that must be followed to keep up with the times. Academic, Government and Entrepreneurs need interconnected cooperation to obtain quality graduates

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