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## Editorial

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### Adhi Kusumastuti

Faculty of Engineering,  
Universitas Negeri Semarang,  
Kampus UNNES Sekaran Gunungpati,  
50229 Semarang, Indonesia  
Email: [adhi\\_kusumastuti@mail.unnes.ac.id](mailto:adhi_kusumastuti@mail.unnes.ac.id)

**Biographical notes:** Adhi Kusumastuti received her PhD in Chemical Engineering from the Universiti Sains Malaysia, in 2014. Currently, she is a Lecturer at the Faculty of Engineering, Universitas Negeri Semarang. Her research interests are wastewater treatment using emulsion liquid membrane. She is qualified in doing research work, thus obtained many funding. She published some articles in some reputable international journals.

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## 1 Introduction

Vocational education in Indonesia was started in 1743 by the development of Marine Academy. In 1853, a vocational school was established, i.e., Ambachts School van Soerabaia (Surabaya Carpentry School), followed by a similar school in Jakarta in 1856. Considering these schools as the benchmark, vocational school in Indonesia has been developed for a century and half. These technical and vocational education institutions have survived after Indonesia's independence by undergoing name changes and some curriculum changes. Schools number run rapidly in accordance with the increase of young people interest to study technical and vocational knowledge.

Technical and vocational education has grown rapidly. The government is currently promoting the role of vocational school that has more registrant due to oriented to work. Government policies, according to Strategic Plan of Ministry of National Education stated that ratio of vocational school and high school was targeted at 50:50 in 2010 and 70:30 in 2015. This policy was expected to be a solution for the unemployment problems. Increased number of vocational education aimed to prepare skilled workers to meet the needs of the workforce in accordance with the demands of the industrial world.

This policy is based on the increasing unemployment rate and the opening of formal and informal sectors that require high-quality middle-class workers. This is due to the deal directly with the work world. The proportion of 70% vocational school and 30% high school in this country seems to be suitable if it is related to the ability to continue their education to the higher level. Vocational school graduates are prepared to be ready-to-use workers, even though the graduates still need to be trained.

The strengthening of vocational education system is expected to increase economic development, embrace technological change, maintain the relevance of skilled workers, maintain productivity growth and reduce poverty. A formal organisational link between vocational schools with industries and businesses, especially international corporations and multinationals, need to be developed. The empowerment of vocational schools to

adopt a business-like approach in day to-day management, including planning and managing their own resources is of important.

EIC Conference 2018 was organised to facilitate the sharing of knowledge in the topic of vocational education. During this conference, a set of papers about vocational education from a variety of disciplines were presented and discussed. Researchers in the background of university members, vocational school teachers, research bodies, and government agencies were brought together in this conference. The papers presented by these researchers applied a variety of methodologies both quantitative and qualitative to achieve deep analyses on vocational education system. This volume was generated to describe current findings in vocational education problems, by providing state-of-the-art of vocational education system. We believe that this volume will provide further comprehensive understanding of this important topic.

## **2 Themes among the papers**

The articles in this volume investigate some themes include student productive skills competencies, education indicator evaluation of UI Green Metric, character learning model, implementation of innovated *welat* as an entrepreneurial readiness, and standard competency gaps of vocational teachers. The first theme – study of students' competencies reported student achievement score data through the performance test instruments. It revealed the relevance of productive skills competencies of vocational school students to the needs of construction services industry. It was found that students of vocational high school with construction program achieved a minimum standard of skills competency as expected in construction services in carrying out construction work. The study concluded that standards of student skills competencies were known through three work indicators in carrying out construction work, i.e., preparation of supporting materials, preparation of work sites, and implementation of work. A development of character learning model was done to establish the institution hotel-based hospitality practice. The obtained data showed that some students failed to properly apply local wisdom criteria. Some students were only interested in certain subjects, shown by the indiscipline and unserious manners in attending the lectures. Study of the application of innovated *welat* to students of Beauty Education Study Program has been done. It was found that innovated *welat* was very helpful in learning process of Solo bridal course. It was reflected by the increase of students' interest in developing students' interest in entrepreneurship. *Latino* was declared feasible to be used to make *paes*. Students' competencies of bridal makeup entrepreneurship in terms of cognitive, affective and psychomotor aspects were high, medium and high, respectively.

A report of the evaluation of education indicator in the Faculty of Engineering, Universitas Negeri Semarang toward the ranking in UI Green Metric is given. Mixed assessment was carried out to identify curriculum, study implementation plans, and sustainable research. The required assessments were collected in each department then screened through terminology scan as preliminary assessment. Sustainability linkages were analysed to henceforth calculate. It was revealed that Faculty of Engineering, Universitas Negeri Semarang has 53.79% sustainability ratio of education indicator. Standard competency gaps were studied by the indication found in previous studies. Competency gaps of vocational teachers must be improved based on the development of knowledge and technology industrial revolution era. This is due to the unacceptable

vocational school graduates in the workforce. The study revealed that majority of respondents felt that teacher professional competence was considered to have a large enough gap to produce an effective and efficient learning process in producing graduates who had competencies in accordance with what was mandated by the curriculum. The competent graduates are expected to be suitable to the needs of workforce.

### **3 Implications of the articles**

As a group, these articles demonstrate several important themes in vocational education. The article contributes positively to finding the level of achievement of students' productive skills competencies, because the students' performance standard skills were in accordance with the dynamics of the needs of the construction service industry. A character learning model in the learning of hospitality practices based on local wisdom for students of tourism department was developed. The more operationally developed character learning model is easily implemented in university. It is therefore the obtained learning model is very useful in determining the steps or policies related to character education on practical learning based on local wisdom to improve the quality of human resources in the hospitality industry.

In study of education indicator evaluation of UI Green Metric, the obtained data could be used as a reference to evaluate and increase the value of sustainability in education indicators.

Teachers, lecturers, and decision makers related to curriculum development should consider the application of learning media to increase students' competency, especially in psychomotor aspect. This is in accordance with the reported finding of the application of innovated *welat* in upgrading students' skill in making *paes*. A research of standard competency gaps of vocational teachers is reported. The results indicated that teachers in vocational school should acquire four competences, i.e., pedagogic, professional, social and personality. Each competency has its respective role and function in realising the objectives of education referring to government law. The gaps must be adjusted to achieve the goals of becoming competent teachers in accordance with the needs and roles as an educator.

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