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PROCEEDING INTERNATIONAL CONFERENCE

Revitalization of Technical and Vocational
Education to Face Industrial Revolution 4.0

Surabaya, July 11 - 14, 2018

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Faculty of Engineering
Universitas Negeri Surabaya
2018

PROCEEDINGS

International Conference

Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (APTEKINDO) 2018

Theme:

**“Revitalization of Technical and Vocational Education to Face
Industrial Revolution 4.0”**

Surabaya, 11-14 July 2018

Speakers:

Prof. Dr. Muhadjir Effendy, MAP.
Minister of Education and Culture, Republic of Indonesia

Michael Freiherr von Ungern – Sternberg
*Extraordinary and Plenipotentiary Ambassador of the Federal Republic of Germany to
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Prof. Dr. Muchlas Samani, M.Pd.
Rector of Universitas Negeri Surabaya period 2010-2014 (Indonesia)



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International Conference

Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (APTEKINDO) 2018

Theme:

“Revitalization of Technical and Vocational Education to Face Industrial Revolution 4.0”

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PREFACE

All praises be to Allah SWT, so that the 2018 International Conference of ***Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (APTEKINDO)*** could be held in Surabaya during 11-14 July 2018. APTEKINDO International Conference is conducted biennially in which this year host is Faculty of Engineering, State University of Surabaya. There were sixteen colleges attending this year Conference, most of which were former Institutes of Teacher's Education (LPTK).

This year theme is "*Revitalization of Technical and Vocational Education to Face Industrial Revolution 4.0*" aimed to respond to the development and acceleration of the industrial revolution 4.0 that has become the most discussed issues in many countries. Industrial revolution connects machines with internet systems. In regard to facing such phenomena, Indonesian government through the Ministry of Industry has launched "Making Indonesia 4.0", of which the program focuses on industries that are driving the development of the industrial revolution 4.0 such as food and beverages, electronics, automotive, textiles and chemicals. To achieve better results of the program actualization, vocational education helps to prepare compatible and competitive workers for the areas of the aforementioned industries. Henceforth, numbers of Conferences, conventions, and meetings among Indonesian practitioners in FPTK / FT-JPTK need to be held to initiate ideas in strengthening the role of LPTK within industrial revolution 4.0 era.

The Conference's proceedings contain 121 research papers and ideas that are relevant to the following nine sub-themes: *Technical and Vocational Teacher Competencies, Technical and Vocational Education Curricula, Technical and Vocational Education Models, Technical and Vocational Education Evaluation, Technical and Vocational Education Policy, Public-private Partnership in Technical and Vocational Education, Technical and Vocational Education Management, Technopreneurship, and Competencies Certification.*

Finally, all the committees send their gratitude to the participating speakers and all parties who support the run of the Conference. They also apologize for any inconvenience and wish a better undertaking event next year.

WELCOMING SPEECH RECTOR UNESA

Conference and Convention

Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (Aptekindo) 2018

Rich Palace Hotel Surabaya, 11-14 Juli 2018

Assalammu'alaikum Warahmatullahi Wabarakatuh.

Respectable Head of Universities, members of APTEKINDO

Distinguished Keynote speakers

Honorable authors, and fellow participants of APTEKINDO Conference and Convention 2018

Alhamdulillah, first of all, let us express our gratitude to Allah SWT because of his grace and blessings, we are able to attend this international Conference and convention of the Indonesia Association of Technology and Vocational Education or ***Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (APTEKINDO)*** held in Surabaya, 11-14 July 2018.

This international and national Conference is conducted biennially as a routine agenda held by Association of Technology and Vocational Education or *Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (APTEKINDO)*, which consists of 16 different universities throughout Indonesia. We would like to thank for the opportunity given to Universitas Negeri Surabaya for hosting this year event.

In the raise of industrial revolution, Conferences, gatherings, and sharing of knowledge play an important meaning in supporting the acceleration of innovative science and technology. Therefore, this Conference's theme is ***"Revitalization of Technical and Vocational Education to Face Industrial Revolution 4.0"***. This is an interesting and challenging topic not only for academic researchers but also for stakeholders and industry owners.

Ladies and gentlemen,

Since 2011, the industrial sector has been integrated with the online system known as industrial revolution 4.0. The first industrial revolution was marked by the use of steam engines to replace human and animal power. The second stage of the revolution was marked by the utilization of electrical power and the concept of mass production. Furthermore, the application of automation technology brought the industrial revolution to its third stage. Tremendous revolution happened when information and communication technology was introduced and fully utilized in industrial area, of which the condition brought the world in the fourth stage of the industrial revolution. The utilization of this technology changed not only the production process, but also across the industrial chains that result in a new digital-based business model which can achieve higher efficiency and better quality in industrial products. The consequences of this revolution are the increase of production efficiency as well as changes in the employment prerequisite. There is an increasing demand for new manpower, whilst the machines are replacing the role of workers. This condition leads to the importance of a new and more advanced method of preparing human resources that are ready to compete in the industrial revolution.

Ladies and gentlemen, in regard to prepare Indonesian human resource in facing the era of media convergence, there are at least two aspects that need our attention, namely the quality of human resources in accordance with the requirement of the digital-based industry and the equal distribution of qualified human resources especially in suburban and urban areas. Both aspects could be meant as a challenge and an opportunity for the higher education especially technology and vocational education to innovate and harmonize curriculum that connects with the industry. Thus, this Conference becomes a perfect momentum for technology and vocational education to join and strengthen steps in preparing graduates that are ready to compete in the industrial revolution 4.0. Therefore, by starting with **“Bismillahirrahmanirrahim” The Conference and Convention of Association of Technology and Vocational Education or APTEKINDO 2018, is officially started**”

Ladies and gentlemen, we would like to thank the keynote speakers who are willing to attend and share knowledge in today’s Conference:

1. Prof. Dr. Muhadjir Effendy, MAP. Minister of Education and Culture, Republic of Indonesia
2. Michael Freiherr Von Ungern–Sternberg, ***Extraordinary and Plenipotentiary Ambassador of the Federal Republic of Germany to Indonesia, ASEAN and Timor-Leste.***
3. Prof. Dr. Wenny Rahayu, *La Trobe University Victoria (Australia)*
4. Prof. Dr. Muchlas Samani, M.Pd., *Rector Universitas Negeri Surabaya (2010-2014).*

We also would like to thank the authors and all participants of the convention who have participated and contributed to sharing the knowledge and ideas. Hopefully, what we share and get here today can give benefits and contribute to improve a competitive atmosphere in Indonesia, Aamiin YRA.

Surabaya, July 2018
Universitas Negeri Surabaya
Rektor,

Prof. Dr. Warsono, M.S.

WELCOME SPEECH BY THE DEAN OF FACULTY OF ENGINEERING
at the International Conference and National Convention of
Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (APTEKINDO) 2018
Rich Palace Hotel, 12 July 2018

Assalamu'alaikum Warahmatullahi Wabarakatuh.

His Excellency, Rector of Universitas Negeri Surabaya
Respectable the Head of Universities as the members of APTEKINDO
Distinguished Keynote Speakers
Honorable authors and Participants

Alhamdulillahirobbil alamiin. Thanks God. First of all, let us express our gratitude to Allah SWT because of his grace and blessings we are able to attend the 9th International Conference and convention of ***Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (APTEKINDO)*** and the 19th workshop of the Technology and Vocational Education for FPTK/FT/FTK-JPTK in Indonesia. It is an honor for us, the Faculty of Engineering, Universitas Negeri Surabaya, to host this year Conference and convention.

On behalf of *Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (APTEKINDO)*, we would like to welcome keynote speakers, authors, delegates and participants from technology and vocational education to the city of heroes, Surabaya.

Today, we meet in Surabaya to attend a biennial agenda named APTEKINDO International Conference and Convention and National Workshop of the FPTK/FT/FTK-JPTK. Following the mandate from the 2016 APTEKINDO Convention in Medan, this year's Conference is held in Surabaya hosted by the Faculty of Engineering, Universitas Negeri Surabaya.

Ladies and Gentlemen, the theme of this year Conference is "*Revitalization of Technical and Vocational Education to Face Industrial Revolution 4.0*". The theme is chosen due to the fact that we have to quickly respond and act accordingly to the effects of the industrial revolution on vocational education. Well-programmed and structured efforts should be undertaken to ensure if technology and vocational education can produce globally competitive graduates especially for industrial revolution era.

Numbers of important topics for technology and vocational education are discussed in this Conference. The topics include Technical and Vocational Teacher Competencies, Technical and Vocational Education Curricula, Technical and Vocational Education Models, Technical and Vocational Education Evaluation, Technical and Vocational Education Policy, Public-private Partnership in Technical and Vocational Education, Technical and Vocational Education Management, Technopreneurship, and Competence Certification.

Today's Conference has several outcomes. The accepted articles will be submitted for proceeding publication indexed by Atlantic Press. Meanwhile, the rejected articles by Atlantic Press will be published in the International Proceedings with International Standard Book Number (ISBN). Moreover, the articles written in Bahasa Indonesia will be published in the National Proceedings with ISBN.

Ladies and Gentleman, this meeting must be meaningful as a venue to communicate among researchers, academics, and members of FPTK / FT / FTK-JPTK from different universities as well as from related industries. By this regular Conference and convention, we can make a strong communication network and create innovative breakthrough and substantial blueprint of different aspects such as institutional quality, field study, and curriculum. We hope that this forum plays an important role in developing technology and vocational education to face the industrial revolution 4.0.

Finally, we would like to thank the organizing committee led by Mr.Tri Wrahatnolo, M.Pd., M.T., who gave an extraordinary support. Moreover, we would like to express our appreciation and gratitude to the members of steering committee from various regions in Indonesia, delegates, SC and OC members, sponsors, as well as personal or institutional support that make this event well-organized. I apologize if there are shortcomings from my part.

Good luck with the Conference of Indonesian Association of Technology and Vocational Education, APTEKINDO 2018, and wish the best improvement for technology and vocational education in Indonesia. Thank you.

Wassalammu'alaikum Warahmatullahi Wabarakatuh

CHAIRMAN'S SPEECH

**at the International Conference and National Convention of
Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia (APTEKINDO) 2018
Rich Palace Hotel, 11-14 July 2018**

Assalammu'alaikum Warahmatullahi Wabarakatuh.

His Excellency, Rector of Universitas Negeri Surabaya,
Respectable the Head of Universities, members of Aptekindo, Keynote speakers, Authors, and fellow participants of Aptekindo Conference and convention 2018.

Alhamdulillah, no words could represent the feelings but the gratitude of the presence of Allah SWT, for His blessings, so that we can attend APTEKINDO Conference with the theme "*Revitalization of Technical and Vocational Education to Face Industrial Revolution 4.0*".

In this pleased occasion, we would like to welcome all keynote speakers, authors, and participants of the Conference to this city of heroes, the city of heroic histories, Surabaya. We would like also to welcome to APTEKINDO 2018 Conference and convention held at the Rich Palace Hotel Surabaya, 11-14 July 2018.

The theme of this year Conference is "*Revitalization of Technical and Vocational Education to Face Industrial Revolution 4.0*". This theme is chosen to respond to the development and acceleration of industrial revolution 4.0 that has been impactful in various countries. This industrial revolution has connected the utilization of machines to an internet system. To face such phenomena, Indonesian government through the Ministry of Industry has launched a program called "Making Indonesia 4.0". Currently, the government is focusing on industries that support the development of the industrial revolution such as food and beverage, electronics industry, automotive, textile and clothing, and chemical industries.

In addition, vocational education plays an important role in preparing competent and competitive human resources. That is, Faculty of Technical and Vocational Education or *Fakultas Pendidikan Teknik dan Kejuruan (FPTK)* in Indonesia aims to compile excellent ideas and vision, which later could be shared through Conferences, conventions or meetings, and also be useful to encounter industrial revolution 4.0.

Today's Conference will present competent keynote speakers in the field of technology and vocational education, who are:

1. Prof. Dr. Muhadjir Effendy, MAP. Minister of Education and Culture, Republic of Indonesia
2. Michael Freiherr Von Ungern-Sternberg, Extraordinary and Plenipotentiary Ambassador of the Federal Republic of Germany to Indonesia, ASEAN and Timor-Leste.
2. Prof. Dr. Wenny Rahayu, La Trobe University Victoria (Australia)
3. Prof. Dr. Muchlas Samani, M.Pd., Rector of Universitas Negeri Surabaya (2010-2014).

In addition, I would like to point out that there are 602 participants from 17 different universities participating in today's Conference involving:

1. Universitas Palangka Raya
2. Universitas Gorontalo
3. Universitas Islam Negeri Ar Raniry Aceh
4. Universitas Negeri Solo
5. Universitas Negeri Manado
6. Universitas Pendidikan Ganesha
7. Universitas Nusa Cendana
8. Universitas Malang
9. Universitas Negeri Jakarta
10. Universitas Negeri Padang
11. Universitas Negeri Yogyakarta
12. Universitas Pendidikan Indonesia
13. Universitas Negeri Makassar
14. Universitas Negeri Semarang
15. Universitas Negeri Medan
16. Universitas Negeri Surabaya
17. Universitas PGRI Adi Buana Surabaya

There are 491 articles submitted to this Conferences covering papers and posters. 76 articles were accepted to Atlantic Press, 156 articles published in international proceedings with ISBN, dan 129 articles published in the national proceedings with ISBN. All articles will be available for an online access through the Atlantis Press official website and through APTEKINDO 2018 website.

Today's Conference is actually held with the helps and good cooperation of various parties. Therefore, we would like to express our gratitude to the Minister of Research, Technology and Higher Education, Rector of Universitas Negeri Surabaya, keynote speakers, participants, sponsors, and other stakeholders for the supports. We also send our highest appreciation to the committees who have worked hard to succeed this Conference.

At last, we hope that all participants get benefits and knowledge that can contribute to reinforce vocational education and technology in facing the industrial revolution 4.0. WELCOME TO APTEKINDO CONFERENCE AND CONVENTION 2018, Thank you.

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The Instructional And Nurturant Effect Of Experiential Learning On Concrete Stones Practice

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Abstract. Experiential learning is a learning process that can explore the insights of learners' knowledge and can develop meaning so that it will give a deep impression on what he has learned. Experiential learning can improve the skills and skills of learners in the practice of concrete stones. In addition to cognitive and psychomotor aspects will also get improved affective aspects of each learner. The general objective of the study is to improve the skills and skills of learners in concrete stone practice with experiential learning. While the specific purpose of the study is to determine the impact of instructional and impact accompaniment that occurred during the learning process experiential learning conducted. This research is a descriptive research with the qualitative approach with the aim to describe the implementation of experiential learning on concrete stone practice. The results of the evaluation of the students' assessment were conducted during the practice in the workshop and the observation test was conducted to determine the affective, cognitive and psychomotor students' ability. From the evaluation results, the model of the learning experience helps learners to achieve the maximum learning objectives. Instructional effect in experiential learning are the application of skills/knowledge, experience, demonstration and acting skills, independent practice skills, group practice skills, socializing skills and communication and cognitive, affective and psychomotor aspects assessment. The nurturant effect from the experiential learning model is changing attitudes, enriching ideas, insights, creative thinking skills and expanding participant skills, owning/responsible for work, fostering creativity, intense communication between participants, self-development and implementation of actions and participants can internalize character (caring, intelligent, independent, and responsible)

I. INTRODUCTION

An interaction between learners, educators, learning resources and learning environment is also called teaching and learning process. Teaching and learning process is a process of behavior change learners as subjects that can be assessed from the aspects of cognitive, affective and psychomotor. The purpose of the learning process in addition to seeing changes in the behavior of learners also sees the impact of its development. All of these are the responsibility of the educator during the learning process. In Undang-undang No. 20 of 2003 article 1, states that education is a conscious and planned effort to create an atmosphere of learning and learning process so that learners are actively developing their potential to have religious spiritual power, self-control, personality, intelligence, noble character, as well as the skills he needs,

society, nation, and state. Synergy between learning learners and educators will produce optimal education during the implementation of the learning process.

Learning is a form of change experienced by learners in terms of its ability to behave in new ways as a result of the interaction between stimulus and response. Stimulus is anything that educators give to learners, while the response is the reaction or response of learners to the stimulus provided by educators. According to Thorndike is the process of interaction between stimulus and response. The theory of learning Thorndike (1874-1949) called Connectionism where learning is the process of establishing connections between stimulus and response. This theory is often also called Trial and error in order to assess the response that exists for certain stimuli. Stimulus is anything that can stimulate the occurrence of learning activities such as thoughts, feelings or other things that can be captured through the sensing device. While the response is the reaction that raised learners when learning, which also in the form of thoughts, feelings, or movement or action. Behavioral changes in the learning process are learning outcomes, and learning outcomes are differentiated into direct impact (instructional effect) and indirect impact (effect nurturant). The instructional effect is the impact of the pre-programmed learning activity, a measurable outcome in the report card, the number in the diploma. While the nurturant effect is the impact that emerged as the influence of experience from the learning environment, can be toward positive or negative.

Practice of concrete stone is one of the existing courses in the Department of Civil Engineering majoring in Building Engineering Education. The learning process of concrete stone practice emphasizes the provision of the direct learning experience (practice). Direct learning experiences can be made if learners are active in learning through observing, questioning, associating, analyzing, practicing, conducting, concluding, and communicating activities will train high-level thinking learners. Learning process of concrete stone practice centered on learners whose learning is done not in class but in civil engineering workshop (Nono, S. 2018). The material of concrete stone practice is a material that has the essence of a product, process, work experience which will be the initial capital of graduates when entering the work world.

Teaching and learning process that is done by educator and learner is by direct practice learning method in workshop.

Practice work is done in accordance with practical learning activities. Stages of learning activities consist of field cleaning, measuring, bow plank installation, foundation installation, brick wall installation, plastering and molding techniques and simple ceramic installation. The educator or lecturer as a lecturer/educator who is directly involved in teaching and learning process plays an important and dominant role in determining the improvement of learning quality and learning achievement to be achieved by the students. With the right strategy, qualified and suitable, it is expected that the learning objectives can be achieved. (Sanjaya, 2005: 99). Competence/knowledge of rock and concrete work practices greatly helps learners as they engage in industrial employment and in particular when they enter the workforce (Siregar, S., 2017). The skills of learners in the practice of good and correct concrete stones are still low, this can be seen with the low ability of students' reasoning in practice in the workshop. The practice of concrete stone is an active learning for learners.

David Kolb (1984) argues experience has an important role in the formation of knowledge while Jean Piaget in Rifa'i & Anni (2012) states that the formation of knowledge can be made man through his own experience. The proverb says that 'experience is the best educator'. The same thing has been put forward by the Chinese philosopher Confucius in the fifth century declared "What I hear, I forget. What I hear and see, I remember a little. What I hear, see and ask questions about or discuss with someone else, I begin to understand. What I hear, see, discuss, and I do, I acquire knowledge and skills. What I teach to another, I master ". If these three statements are simply analyzed, the point is that learning from experience will produce optimal knowledge and skills. Mastery of the material or the best lesson is to work directly or directly involved in learning. The material learned through learning with experience is expected learners can build more memory or memories and give a meaningful impression.

What kind of learning process can create a learning process that can explore the insights of learners' knowledge and can develop meaning so that it will give a deep impression on what he has learned? Alternative learning model that can be used to answer the problem above one of them is by using experiential learning model. With experiential learning can improve the ability and skills of learners in the practice of concrete stones. In addition to cognitive and psychomotor aspects will also get improved affective aspects of each learner. Improved affective aspects will give instructional effect during the learning process and the nurturant effect after the learning process.

RESEARCH PURPOSES

The general objective of the research is to improve the skills and skills of students in concrete stone practice with experiential learning. While the specific purpose of the study is to determine the instructional effect and nurturant effect that occurred during the learning process experiential learning conducted.

EXPERIENTIAL LEARNING MODEL CONCEPT

Experiential learning theory, which later became the basis of the experiential learning model, was developed by David Kolb around the early 1980s. This model emphasizes a holistic learning model in the learning process. In experiential learning, experience has a central role in the learning process. It is this emphasis that differentiates Experiential learning theory from other learning theories. The term experiential is here to distinguish between cognitive learning theories that tend to emphasize cognition rather than affective. And the theory of learning behavior that eliminates the role of subjective experience in the learning process (Kolb in Baharudin and Esa, 2007: 165). Experiential Learning Model is a model of teaching and learning process that enables learners to build knowledge and skills through their experience directly. In this case, experiential learning uses the experience as a catalyst to help learners develop their capacities and abilities in the learning process.

Experiential learning is defined as an action to achieve something based on experience that constantly changes in order to improve the effectiveness of the learning outcomes themselves. The purpose of this model is to influence learners in three ways, namely

- Change the cognitive structure of learners.
- Change the attitude of learners.
- Expanding the skills of existing learners.

The three elements are interconnected and affect as a whole, not separated, because if one element does not exist, then the other two elements will not be effective. Experiential learning emphasizes the strong desire within the learners to succeed in learning. This motivation is also based on the goals to be achieved and the chosen learning model. The desire to succeed can increase the learner's responsibility toward his learning behavior and will feel able to control the behavior. Experiential learning refers to meeting the needs and desires of learners. The quality of experiential learning includes the involvement of students in the personal, initiative, evaluation by the students themselves and the effects that imprint on the students.

The experiential learning model allows learners to decide what experiences they focus on, what skills they want to develop, and how they can conceptualize the experiences they experience. This is in contrast to the traditional learning approach in which learners become passive listeners and only educators who control the learning process without involving learners.

EXPERIENTIAL LEARNING PROCEDURE

This kind of learning model provides opportunities for learners to actively learn activities. Hamalik further argues that experiential learning provides a set or set of learning situations in the form of actual experience involvement designed by educators (Hamalik, 2001). This method leads learners to gain more experience through active and personal involvement, compared to theirs just read a material or

concept. Thus, learning based on experience is more focused on the learning experience of learners that are open and learners are able to guide themselves.

Based on the above opinion can be understood that the application of experiential learning model can help learners in building their own knowledge (Depdiknas, 2002). As with any other learning model, in applying the experiential learning model the educator must improve the procedures for learning to run properly. Hamalik (2001), reveals several things that must be considered in experiential learning model are as follows:

- 1) *The educator formulates a plan of open-minded learning experience that has certain results.*
- 2) *Educators must be able to provide stimulation and motivation.*
- 3) *The learners can work individually or work in small groups/entire groups in experiential learning.*
- 4) *The learners are placed in real situations, meaning that learners are able to solve problems and not in substitution situations.*
- 5) *The learners actively participate in the experience available, make their own decisions, accept the consequences based on the decision.*
- 6) *The whole class recounts what they do with the material to broaden the learning experience and understanding of the learner. The learning experience will be a percentage and later learners will discuss the various learning experiences with other learners.*

In addition to some things that must be considered in the experiential learning model, educators must also pay attention to the method of learning through this experience, which includes the following three things.

- 1) *Learning strategies through experience are learner-centered and activity-oriented.*
- 2) *The emphasis on learning strategies through experience is a learning process, and not a learning outcome.*
- 3) *Educators can use this strategy well in the classroom or outside the classroom.*

To achieve maximum results, it is necessary to do a more comprehensive learning that is by experiential learning. Experience will present the basis for reflection and observation, conceptualizing and analyzing knowledge in the minds of learners (Arsoy & Özad, 2005). According to Sharlanova (2004) experiential learning model consists of four stages of the cycle, namely abstract conceptualization, active experimentation, concrete experience, and reflective observation. Experiential learning model based on lab work in this research that is learning model which applied by practicum activity.

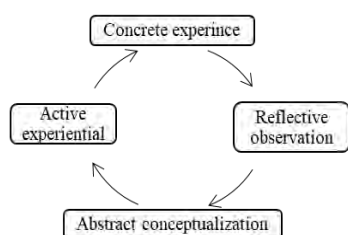


Fig. 1. Kolb's Experiential Learning Cycle (Kolb, 1984)

B. Instructional and Nurturant Effect

This kind of learning model provides opportunities for learners to actively learn activities. Hamalik further argues that experiential learning provides a set or set of learning situations in the form of actual experience involvement designed by educators (Hamalik, 2001). This method leads learners to gain more experience through active and personal involvement, compared to theirs just read a material or concept. Thus, learning based on experience is more focused on the learning experience of learners that are open and learners are able to guide themselves.

To achieve the goal of affective learning must be created the system of learning environment required by learners (Sardiman, 1986: 28). The purpose of instructional instruction, in the form of knowledge and skills, while nurturant effect, is achieved because learners to live in a learning environment system, such as critical and creative thinking ability, open and democratic attitude, accept the opinions of others. Educators in teaching must already have a plan and set appropriate learning strategies to achieve the instructional effect and nurturant effect. The nurturant effect in the learning activities can occur more than one, for example, the formation of understanding, appreciation, attitude, motivation, awareness, social skills, and behavior. The impact of companion and instructional impact must form a corresponding relationship to produce optimal learning. Therefore, the impact of accompanist on a learning process can be an instructional effect on the learning process. Affective learning is learning that not only gives instructional effects, but also provides nurturant effect.

The learning strategy chosen and used should have an impact on the expected outcomes. A learning process is said to succeed not only success in knowledge (cognitive) and psychomotor skills but also attention to attitude (affective) aspects. Evaluation of one aspect alone will cause less learning has a comprehensive meaning. These three aspects are the supporting elements of learning outcomes because the discussion of education includes behavior, ideas, taste, and initiative. Classroom management strategy in learning improves direct instructional (instructional effect) and indirect learning (nurturant effect).

The impact of direct learning is the impact of goals that will be directly achieved through the implementation of learning programs by educators. Sapriati, (2009) states the results of cognitive domains, including 1) knowledge; 2) comprehension; 3) application; 4) analysis; 5) synthesis; 6) assessment. Psychomotor domain results, including 1) perception; 2) ready to act; 3) impersonate; 4) mechanical motion; 5) complex motion. These two domains can be measured concretely and surely after the implementation of the learning program. These two domains form the impact of instructional instruction. The instructional impact regarding affective domains (attitudes and values), including; 1) accept; 2) respond; 3) appreciate; 4) self-regulating; 5) become a lifestyle. The nurturant effect is a result that is not directly measured and uncertain when the end of the teaching and

learning process. Things to consider in the nurturant effect are; 1) learners to be modeling (can imitate), 2) contagion; 3) osmosis about the knowledge, skills, and attitude of learning conditions, both programmed by educators and those not programmed by educators. The results in abstract and difficult form are defined to be possessed and controlled by the learners after the end of the teaching and learning activities, but will affect or result in the learners either partially or entirely accompanying the results achieved by the impact of direct learning, may still require some time or some meeting of activities learning

II. METHOD

This research is a descriptive research with the qualitative approach with the aim to describe the implementation of Experiential Learning on concrete stone practice. Researchers use a qualitative approach because the issues discussed more describe, elaborate and reflection the implementation of learning model experiential learning. The type of research used is field qualitative research (field research). This qualitative research can be viewed as a research procedure that produces descriptive data in the form of written or oral words of people and behaviour that can be observed (Moelong, 2002). While the approach used in this research is descriptive analysis approach because it aims to describe and analyze the problems that occur in the learning process.

Research subjects are students of Civil Engineering Department of the Building Engineering Education Universitas Negeri Medan with respondents as many as 27 leaners. To obtain complete data required instruments by collecting data through interview sheets, observation sheets, and documentation. The research instrument includes the cognitive, psychomotor and affective aspects observed directly by the researcher during the learning process. Data analysis is done by tabulating the result of the instrument, then analyzed by the existing theory

III. RESULTS AND DISCUSSION

Models, methods, and strategies are very important components in education because, with the model, methods and strategies of educators and learners are able to carry out optimal learning so that the results of learning in accordance with the expected. Apart from that an educator must fulfill his obligations, be a motivator and facilitator for learners. Experiential learning is an educational process, focused on the learner, and activity-oriented. A personal reflection of an experience and formulating a plan to define what has been gained from science experience for other scientific contexts is a critical factor in maintaining the effectiveness of the experiential learning model.

The experience has been felt by learners have an important role in the formation of cognitive knowledge in the minds of learners. Learners reflect on the experience of new knowledge. Involvement of learners in practice will make the individual get real hands-on experience. The learner will then develop an observational skill and then reflect on the experience he has gained. After this phase, participants will form generalizations

in their minds which then produce the implications that become a grip on the new experience.

Experimental learning is illustrated in the learning cycle of concrete stone practices that are curled up in each phase. There are four stages of experiential learning model, namely Concrete Experience, Reflective Observation, Abstract Conceptualization, Active Experimentation. Sharlanova (2004). Experiential Learning stage results provide learning activities in Kolb learning cycle as follows:

CONCRETE EXPERIENCE

At the concrete experience stage, learners either individually or in groups only do the practical work of concrete stones in accordance with the given learning materials. The intended task is a practical activity that encourages learners to practice or experience their own work done. Learners act as active participants. This phenomenon can depart from experiences previously experienced either formal or informal, or situations that are real problems so that it can arouse the interest of learners to investigate further. The results can be seen in Figure 2 below. Figure 2 explains the concrete experience of learners during concrete stone practice. A total of 13 statements were observed during the concrete stone practice process. Assessment score is from 1 and 4 where value 4 is the highest value and value 1 is the lowest value. The result states that learners are skilled in using the tools and materials of concrete stone practice. The tools and materials of concrete stone used will be different for each learning activity. The skill of using the equipment properly with a score of 3.74 and the skill of taking the material according to the learning activity with scoring 3,70. The lowest rating is on the use of personal protective equipment (2.96). The observations made are the students pay less attention to the use of personal protective equipment such as practice clothes, masks, gloves and others. This is probably because students are not used to using that equipment.

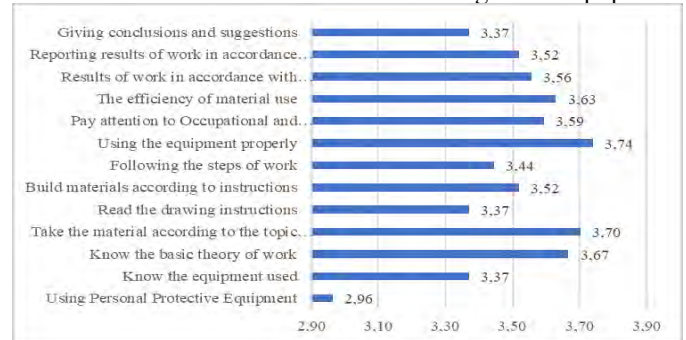


Fig. 2. Assessment of concrete experience

REFLECTIVE OBSERVATION

At the reflective observation stage, learners review what has been done or learned in the practice of concrete stones. Listening skills, giving attention or responses, finding differences, and applying ideas or ideas can help in getting the results of reflection. Learners observe carefully from practice activities that are being done by using the senses or feelings

and then reflect on the results obtained. At this stage, learners communicate with each other the results of the reflection performed. The results of the reflection observation stage can be seen in Figure 3 below. The reflective observation stage is learners doing practical activities and reviewing the activity. Review activities undertaken consist of preparation, process, and product. The result is that the review activity in the process is the highest scoring activity (3.53), then product activities (3.52) and preparatory activities (3.43)

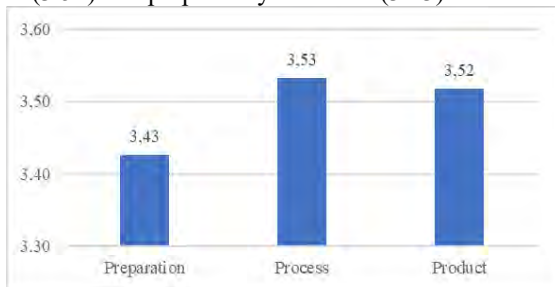


Fig. 3. Assessment of reflective observation

ABSTRACT CONCEPTUALIZATION

The abstract conceptualization stage is a mind-on stage or a "think" phase in which learners are able to provide a mathematical explanation of a phenomenon by thinking, looking at the reasons for the mutual relationship to the experience gained after observation and reflection on the experience of concrete stone techniques in the concrete experience phase. Learners try to conceptualize a theory or model of observed experiences and integrate new experiences gained with prior experience.

Assessment abstract conceptualization did after concrete experience and reflective observation. This stage in which learners reflect on their ability in practice. There are 11 statements to be observed in this assessment. The practice of concrete stones cannot be done independently. Therefore teamwork is very helpful for the implementation of the work. It is seen in Figure 4 that cooperation is the most prominent (3.81), followed by tolerance with other participants (3.70) in practice. The learner has a low score (3.44) for the participants' willingness to conduct the experiment in front of the class, it is possible that the participants have not yet had a highself

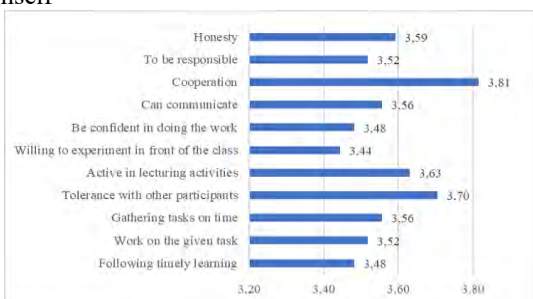


Fig. 4. Assessment of abstract conceptualization

ACTIVE EXPERIMENTATION

At this stage, learners test the ability to make work/tasks about making the practice of concrete stone with plaster material. Plastering work is done by learners to gain learning experience. With this active experimentation activity, learners will practice critical thinking skills, be active in practicing ability and learn from experience. Learners know the extent to which understanding has been had in solving problems related to plastering. Figure 5 shows an Active Experimentation assessment in the form of work or tasks the learner performs in a concrete stone practice. There are ten observed assessments of the learner. Assessment is done by filling the instrument observed by the researcher to each learner. The highest score is 4 and the lowest score is 1. The result shows that cooperation and interaction have the highest score (3.85). Cooperation/interaction conducted not only between participants but also participants with facilitators (educators). Assessment of presentations, understanding of work and having an action plan has a minimum score of ten items of statement that is 3.48

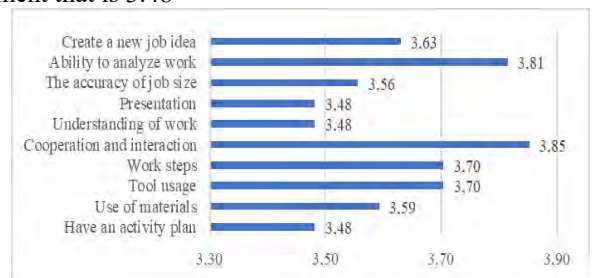


Fig. 5. Assessment of active experimentation

INSTRUCTIONAL EFFECT AND NURTURANT EFFECTS

The instructional effect is the learning outcomes achieved or directly related to the learning materials, while the nurturant effect is the result of side learning accomplished as a result of the use of a particular learning model. The instructional effect during concrete stone practice processes is the application of skills/knowledge, experience, demonstration and acting skills, independent practice skills, group practice skills, socializing skills and communication and cognitive, affective and psychomotor aspects assessment.

The experiential learning model is a learning model where students are expected to create a more meaningful learning process and students experience firsthand what they learn. With this model, the learning process is not just about material concepts, but the learning process is used as an experience. The results of experiential learning not only emphasize the cognitive aspect but also the knowledge of the combination of understanding and transforming experience. Therefore, the nurturant effect of the experiential learning model is to directly alter the cognitive structure, change attitudes, enrich ideas, insights, creative thinking skills and expand participant skills.

In addition, learners feel that they have ownership, creativity, intense communication between participants, personal development and application of action. Specifically

stated impact of the accompanist is the participant can internalize the character (caring, intelligent, independent, and responsibility)

IV. CONCLUSION

The purpose of the evaluation is to determine the level of success of learning with experiential learning model. The evaluation of educators conducted during the concrete stone practice can help improve learning disadvantages. Evaluation of learners conducted during practice in the workshop and observation tests conducted to determine the ability of learners are affective, cognitive and psychomotor. From the results of the evaluation, the experiential learning model helps learners to achieve maximum learning goals.

The instructional effect of experiential learning is the application of skills/knowledge, experience, demonstration and acting skills, independent practice skills, group practice skills, socializing skills and communication and assessment of cognitive, affective and psychomotor aspects. The nurturant effect from the experiential learning model will directly alter the cognitive structure, attitude change, enrich the idea, insight, creative thinking ability and expand the skills of the participants, have/responsible for the work, foster creativity, intense communication between participants, self-development and application action. Specifically stated nurturant effect is the participant can internalize the character (caring, intelligent, independent, and responsibility)

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