PROCEEDING

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Preface

We feel thankful to Allah for the blessing so that the book of proceeding of National Seminar completely compiled in relating to the 8th National Convention of Indonesian Association of Technological and Vocational Education (APTEKINDO) and 19th Indonesian Congress of FT/FPTK-JPTK 3 - 6 August 2016 in State University of Medan.

The main objectives of the seminar is to improve the capability in vocational technology in theme: **The role of educational technology and vocational in Asean Economic Community (AEC)** which is adopted from the researches in order to upgrade the graduates to be International standard so that the output of LPTK-PTK be able to compete in AEC. Therefore, the National seminar, convention and workshop of Indonesian LPTK-PTK may emerge the thoughts how to strength the role of LPTK to improve the quality of the vocational teachers in Indonesia.

Hopefully this proceeding book will be useful to develop technology, art, and culture. This book also can be as a reference to intensify the National development.

The committee would express our gratitude to all participants and stakeholders in supporting the National seminar, convention and workshop of Indonesian LPTK-PTK

Medan, 6 August 2016
Chairman,

Prof. Dr. Abdul Hamid K, M.Pd.
NIP. 195802221981031001

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EI-05-036 MEDIA DEVELOPMENT BASED LEARNING INTERACTIVE MULTIMEDIA SKILLS SUBJECT CRAFTS

Dina Ampera & Efnarayi Artania Siagian, State University of Medan

EI-05-037 AUTOMATED-KNOWLEDGE MANAGEMENT SYSTEM MODEL IN VOCATIONAL EDUCATION FOR ENHANCING LEARNING CAPACITY

Yeni Anistyasari & Rina Harimurti, State University of Surabaya

EI-04-003

EVALUATION OF PROGRAM WORK PRACTICE IN INDUSTRY (PRAKERIN) IN THE ERA OF CENTRALIZED VOCATIONAL EDUCATION IN THE WEST SUMATRA USING CIPPO MODEL

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ABSTRACT: This study aims to reveal the context, input, process, product, and impact on work practices industry (prakerin) at SMK in West Sumatra. Program evaluation model used to evaluate prakerin is CIPPO (Contex, Input, Process, Product, Outcome). The findings of the study in terms of the context of the environment are for prakerin students of SMK N 2 Sijunjung categorized for enough, while for students SMK 5 Padang, Pariaman SMK 1, SMK 1 Bukittinggi, and N 2 Payakumbuh was in good category. Component input for Human Resources (HR) including tutor, students, facilities and infrastructure, and the relevance of the program to the needs of the opinion is good, while HR instructors in prakerin places or industry is not so good (enough) and the source of funds for prakerin was categorized as enough. Then in terms of the process relating to the preparation includes both categories. For students N 2 Sijunjung in terms of monitoring of the implementation was categorized as enough. While it is generally students SMK experience obstacles in implementing prakerin. Relating to the variable products, for all SMK is in good category. Similarly, the impact (outcomes) including unfavorable category, because most (almost 70%) of the vocational school graduates want to go to college to increase knowledge and skills, so the interest in entrepreneurship is still low. The same category of information pertaining enough about the world of work directly from entrepreneurs who have been successful.
Key Word: Vocational Education, Prakerin, Program Evaluation, and Model CIPPO.

I. INTRODUCTION

To day there are still many problems in the national education system; low quality of education, the lack of equity in gaining access to education, lack of efficiency in the delivery of education, and lack of democratization of education so that the community's role in education is still very limited. Good quality education must always accommodate changes and developments in society, both the development of norms of social values, culture, politics, economy and technology. Efforts to improve the quality of education is essentially an effort to improve the competence of graduates of the educational unit, not least vocational education (Vacational education).

Expectations are so high and the role of the vocational education in the development of qualified human resources can not yet be realized optimally. In fact there is still a gap between expectations and reality, especially with regard to a mismatch between the capabilities of the graduates to the demands of the workplace or industry. This is one of the main problems of national education, especially vocational education.

Vocational education held in the school system and school education, is a very important part of the national education system. The vocational education has a direct connection with the process of industrialization, especially if associated with functions that provide skilled labor, flexible and mastering technology continues to increase at the secondary level.

Problems with vocational education graduates they are not ready to be employed, received considerable attention from the government. One form of the policies issued by the government to tackle it is education policy Dual System (Dual Base System). Dual System Education (PSG) is one form of organizing vocational education and training in the industry is done in a systematic way to achieve the desired competence profile and behavior in the labor market. At school, while students learn the basic provisions that are theoretical and basic vocational skills in an institution or company partner, students can practice the right way and do things that are tangible and the practical results can be consumed by the public.

Realization of the Dual System Education is the implementation of Industrial Work Practices (Prakerin). Prakerin implementation meant that the education program at school refers to the achievement of professional capability in accordance with the demands of the business / industry (Dudi), which requires a qualified workforce and experts in the field to operate equipment that is technologically advanced.

Implementation of the program industry practice (Prakerin) in several vocational schools in West Sumatra have a significant impact on the improvement of skills of graduates. Prakerin are expected to improve the skills (skills), motivation and work ethic graduates not yet achieved well. It can be seen from thirteen thousand graduates of vocational schools in West Sumatra, the number of vocational schools recorded is 230 schools, only 20% who enter the workforce (Burhasman Bur, Head of Education, Youth and Sports of West Sumatra in Padang Ekspress, 2009). Meaning from 13,000 vocational graduates 20% of graduates of vocational schools in West Sumatra are entering the workforce, more than 80% may enter the State / Private and most certainly does not work a.ka unemployed.

From the survey conducted by the author to several vocational schools in West Sumatra and short interviews with some of the teachers, students and alumni of Prakerin obtained information that implementation has again yet run as expected. In terms of context and input; students not yet equipped with the knowledge and adequate information about the world of work before prakerin, students are not mentally ready to plunge into the world of business / industry (Dudi), students participate Prakerin not well selected according to the requirements that have been determined, prakerin students sometimes do not match their interests and talents of the students, and not to mention the determination of the supervising teacher meet clear criteria, means facility at school not to be ready to support the students' knowledge in science before plunging into the business / industry.

In the process of implementation; tutor often no monitoring or supervision to the prakerin, students at prakerin not given work experience that is adequate they are just more often watch technicians when they practices of the participating works so experience of work they get is very minimal, instructor in DUDI not know what to give to the students because they are not included in the planning prakerin from the beginning, students are not well controlled by the supervisors and the school.

The process of evaluation are the results by the students prakerin DUDI not done well. Student given scores are not following the correct procedure, only to taste of the instructors, there is no test of sufficient competence to students by the school after the program prakerin implemented, so it is very difficult to quantify the increased competence (soft skills and hard skills) students after executing prakerin in the business / industry. From some of the above conditions then it is feared that the product of the implementation of the program Prakerin form; changes in behavior, skills, insights, soft and hard skills that lead students to the competence of the students after executing Prakerin program is not changed significantly.

Prakerin programs in several SMK in West Sumatra carried out by X semester students with varying periods of time and place. For prakerin location which is at the area around the West Sumatra prakerin execution time is approximately 3 months, outside of West Sumatra as to the province of Riau, Riau Islands province and Jakarta between 4 to 6 months. With so much time to implement Prakerin of the results of a survey conducted on some of the students at SMK as well as some alumni turns Prakerin program implementation has not impacted significantly to improving the competence of graduates. Besides not many among them who may enter the workforce, the performance is able to work in accordance with skills not improved significantly. Many among them are likely to continue their education to pursue Universities and less interested in entrepreneurship.

Implementation of the program industry practice (Prakerin) at SMK in West Sumatra require the evaluation process. Evaluation as one component that can not be ignored. Evaluation role in supporting the success of a program. As is known Prakerin a national education program for CMS to provide work experience for students in the industry, so it is expected that students have the motivation and a high work ethic.

Employment Practices Industry (Prakerin) is part of the learning program to be implemented by each learner in the workplace, as a concrete manifestation of the implementation of the system of vocational education, namely Dual education system(PSG). Prakerin program developed jointly between the school and the world of work in order to meet the needs of learners and the world of work as a contribution to the development of vocational education programs. By prakerin learners can fully master the aspects of competence required curriculum, and in addition recognize early work world soon after graduating.

The purpose of the evaluation is to obtain an accurate and objective information about the program. Such information may include the process of program implementation, impact / results to achieved, the efficiency and utilization of the results of the evaluation focused on the program itself, which is to take a decision whether to continue, corrected or discontinued. In addition, it is also used for the benefit of the preparation of the next program and the development of policies related to the program.

The education sector in terms of objectives, evaluation can be seen from macro and micro. Evaluation of the macro objective is the education program, a program that is planned to improve

education. Evaluation of the micro is often used at the class level, especially to know the students' learning achievement. Achievement of this study not only are the cognitive, but also includes all the existing potential in students. So target micro evaluation is learning programs in the classroom and the teachers supervisors (Mardapi, 2000: 2).

Evaluation models CIIP is a model that is widely known and applied by the evaluators. CIPP Model was developed by Stufflebeam and colleagues (1986) at Ohio State University (OSU). CIPP is an acronym for: Context, Input, Process, and Product. The fourth word that is mentioned in the acronym CIPP is the target of evaluation, which is a component of a process of a program of activities. CIPP Model is a model of evaluation that looked at the program being evaluated as a system. This model coupled with Outcome (impact), so it called CIPPO.

III. METHODS

This study is an evaluative research using quantitative descriptive approach. Evaluative research to determine the end of a policy program that determine the final outcome of a policy to determine the policy over the last recommendation, which the ultimate goal is to determine the next policy (Suharsimi, 2009: 7).

The subjects of this study is, the Principal, the Chairman of the Work Group Prakerin, Prakerin Working Group Finance, Teacher mentors Prakerin, Adaptive Coordinator, Coordinator Normative, Parents' and Students SMKN XII class technology that has implemented the TP Industry Work Practices. 2011/2012. The total number of study subjects was 305 students. This research samples using proportional random sampling technique. The sampling of the subjects the students in this study was 50% of the total population.

Data was collected in collection of primary data, secondary data collection and testing of data validity of research findings. Secondary data collection through observation, questionnaires, scale of measurement, the test instrument validity and reliability as well as interviews. The collection of secondary Data done with the study documentation. Data analysis techniques were analyzed quantitatively with stage 1) do tabulating the data to the questionnaire has been filled in by the respondent, 2) calculating the score for each indicator, 3) a count of the total score, 4) analysis further processed with the average level of attainment. To analyze the interview data researchers used data analysis interactive model of Miles and Huberman of data reduction, data presentation and conclusion or verification.

IV. RESULTS AND DISCUSSION

A. Research Result

The results of this study are listed in Table 1.

No	Variabel	SMKN 5 Padang		SMKN 2 Sijunjung		SMKN 2 Payakumbuh		SMK N 2 Bukittinggi		SMK N 1 Pariaman	
		$\bar{X}$	Kategori	$\bar{X}$	Kategori	$\bar{X}$	Kategori	$\bar{X}$	Kategori	$\bar{X}$	Kategori
1.	Konteks										
	1.1 The objective of Prakerin	3,3	G	3,2	G	3,6	G	3,5	G	3,4	G
	1.2 The environment of Prakerin	3,1	G	3	E	3,1	G	3,2	G	3,2	G
2.	Input										
	2.1 Student resources	3,1	G	3,1	G	3,4	G	3,4	G	3,3	G
	2.2 Mangement human resources in industrial areas	2,9	E	2,9	E	3,4	G	3,3	G	3,2	G
	2.3 Teacher human resources	3,0	G	3,0	G	3,2	G	3,2	G	3,1	G
	2.4 Instructure human resources in industry	2,9	E	2,9	E	3,3	G	3,1	G	3,1	G
	2.5 Infratructures	3,2	G	3,2	E	3,5	E	3,3	G	3,4	E
	2.6 Source of funds	2,5	E	2,4	E	2,4	E	2,8	E	2,6	E
	2.7 The relevance of the program Prakerin with the needs of students	3,3	G	3,4	G	2,9	E	3,2	G	3,5	G
3.	Process										

	3.1 Preparation of implementation prakerin	3,1	G	3,2	G	3,2	G	3,4	G	3,2	G
	3.2 Implementation of the program in an industrial area	3,1	G	3,1	G	3,3	G	3,4	G	3,3	G
	3.3 Monitoring the implementation prakerin	2,9	E	3,1	G	3,4	G	3,3	G	3,1	G
	3.4 Barriers to implementation prakerin	2,9	E	2,8	E	3,9	G	2,1	E	2,5	E
4.	Product Competence enhancement students and Change insights, behavior, and emotions of students	3,3	G	3,2	G	3,7	G	3,4	G	3,5	G
5.	Outcome	Enough, because 70% of vocational school graduates want to continue their education to college, 10% are interested in entrepreneurship, and 20% are ready to enter the		Enough, because 70% of vocational school graduates want to continue their education to college, 10% are interested in entrepreneurship, and 20% are ready to enter the world of		Enough, because 70% of vocational school graduates want to continue their education to college, 10% are interested in entrepreneurship, and 20% are ready to enter the world of		Enough, because 70% of vocational school graduates want to continue their education to college, 10% are interested in entrepreneurship, and 20% are ready to enter the		Enough, because 70% of vocational school graduates want to continue their education to college, 10% are interested in entrepreneurship, and 20% are ready to enter the world of	

		world of work	work	work	world of work	work

Note:

G = Good

E = Enough

B. Discussion

Vocational education is one form of the education system in Indonesia, the purpose of vocational education is not regardless of the purpose of education in general, which prepares a person to afford a career in public (to prepare people to adjust to improve the society in the which the exist). Rupert Evans (1978) states vocational education aimed at: (1) meeting the manpower needs of society, (2) increasing the options available, to each student, and (3) serving as a motivation.

Employment Practices Industry (Prakerin) is part of the learning program to be implemented by each learner in the workplace, as a concrete manifestation of the implementation of the system of vocational education, namely education system Ganda/Dual Education System (PSG). Prakerin program developed jointly between the school and the world of work in order to meet the needs of learners and the world of work as a contribution to the development of vocational education programs.

Prakerin learners can be fully master the aspects of competence required curriculum, and in addition recognize early work world, soon after graduating. SMK as an educational institution which is expected to deliver its graduates into the world of work needs to be introduced for early social environment prevailing in the workplace. Experience interacting with the World of Work and directly involved.

i. *Purpose and Environment Program Places Prakerin*

Mastering of competencies with learning in school is determined by learning facilities available. If availability is limited, schools need to design learning competencies outside the school (partners working world). The competence of learning not be left entirely to the world of work, but the school needs to give direction on what should dibelajarkan to learners.

Abilities that learners already have, through training and practice in schools need to be implemented in practice so that the growing awareness that what has been useful to themselves and others. With so learners will be more confident that others can understand what he understood and accepted by the public knowledge.

Based on the findings of research conducted concluded that the environmental objectives and prakerin already in either category, however Mean values of each school is different. There are findings in SMK N 2 Sijunjung of analyzes student responses through questionnaires found Prakerin students about the environment are in the unfavorable category. This is due to less precise placement Prakerin place in accordance with the interests and desires of students. Nevertheless the results of interviews with teachers stating placement and Prakerin environment this is in conformity with the provisions so as to support the achievement of objectives Prakerin.

ii. Strength Owned Program Prakerin

In the era of globalization we often hear the words of fierce competition in the world of work. This means that all students must improve its competitiveness both quality, and expertise. Increased competitiveness starts from the preparation of the Human Resources (HR) which is a quality factor of excellence in competition in question. If we can not anticipate the preparation of qualified human resources, among others, education, expertise and skills, especially for workers in sufficient numbers, the prospective workers will Indonesia will lose when competing with other countries. Therefore, our country needs to prepare the human resources at the secondary level who have the necessary skills to the needs of the industry or the business world. To address all of the implementation of the Job Training Industry (Prakrin) in Kejuaruan Secondary School (SMK) so is important.

HR will greatly affect the achievement of the objectives of Prakerin. In this study there were four human resources should be reviewed. Among it Students as participants of Prakerin, Prakerin staff in Industry, HR counselor, instructor HR industry. The findings of research on human resource indicators covering student competency of students before plunging implement Prakerin, students' adaptability to the environment industry, the personality of students and student communication with people in the industry. Overview of student responses through a questionnaire distributed as a whole has been in both categories.

Human resources management of staff Prakerin in the industry include students' views on the structure and management between Prakerin by staff managers in industry and communications management staff with the various parties concerned with the implementation of Prakerin. Overview of student responses through a questionnaire distributed there reveals that there are two schools that have unfavorable category include SMK N 5 Padang and SMK N 2 Sijunjung. Meanwhile, SMK N 2 Payakumbuh, SMK N 1 Bukittinggi, and SMK N 1 Pariaman are in good category. Students of SMK N 5 Padang and SMK N 2 Sijunjung prakerin managers in the industry feel less able to provide information in accordance with the needs of students.

HR tutor includes the competence and the information can be given the teacher to the students about the world of work. This will be very important because students often interact with the teacher should be a source of information for students. Overview of student responses through a questionnaire distributed by whole has been in both categories. Mean value of the highest of SMK N 2 Payakumbuh that is equal to 3.28.

HR instructor industry include the ability to guide and be the source of learning for students Prakerin. Overview of student reveals responses through a questionnaire distributed there are two schools that have unfavorable category include SMK N 5 Padang and SMK N 2 Sijunjung. Meanwhile, SMK N 2 Payakumbuh, SMK N 1 Bukittinggi, and SMK N 1 Pariaman are in good category. Students of SMK N 5 Padang and SMK N 2 Sijunjung feel HR industry instructors are less able to provide information and experience relevant to the needs of students.

iii. Facilities and Infrastructure Support, Funding and Relevance Program with Needs Students in the Program Implementation Prakerin in Industrial Area

Facilities and infrastructure are needed to support the implementation of Prakerin for students to apply the knowledge gained in school to the world of industry. Availability of equipment which are in industry will reflect development of the industry, so it is expected that students are able to recognize and operate the facilities and the facility. From the research findings a whole school already are in the good category. It can be interpreted that the industrial world the students had the opportunity to recognize and use the existing facilities and infrastructure in the industry.

To carry out an activity is certainly needed funds to support the ongoing activities. For the implementation of Prakerin source of funds can come from various sources. From parents, schools and industry. The fund management should be done in a transparent manner. Of the overall response to the research findings of the students are in the unfavorable category. This is due to Prakerin funding sources the majority come from the parents. Surely the distance and the place chosen for the implementation Prakerin students will affect the nominal must be spend. However, there are differences in SMK N 1 Bukittinggi. From interviews with teachers of SMK N 1 Bukittinggi, the SMK is applied cross-subsidies. That is the distants of Prakerin places not affect the implementation of the nominal paid students.

Indicators for Prakerin program relevance to students' needs is the information required students in the industrialized world. It obtained by through debriefing as early information before plunging directly into the world of work. Students need information about the world of work in which they carry out Prakerin. Conformity areas of expertise of the students with a place of execution Prakerin is the most important factor. From the research of the relevance Prakerin student responses to the needs of the students are in good category unless SMK N 2 Payakumbuh who are in the unfavorable category.

Results of interviews with teachers Prakerin overall coordinator of the school concluded that debriefing for students before Prakerin is mandatory for students who will carry out Prakerin. This briefing material related to purposes and information about the world of work. Do not miss the K3 also included briefing material. The source for this material is often from productive teacher.

iv. Role and Obstacles in Implementation Program Instructor Prakerin Students in Industrial area

At this variable starts with the preparation for the review of Prakerin. This preparation emphasis on debriefing. At the debriefing the students need information about where they will carry out Prakerin. Briefing material from the mentor gets better combination between school teachers with industry players place Prakerin implemented. The results showed indicators of the overall preparation of the implementation Prakerin are in either category. This proves the teacher provides information about the world of work to students according to the needs that will be undertaken students at Prakerin.

After preparation, the next indicator is Prakerin program implementation in the industry. The beginning of the introduction or adaptation is required for students to the industry. The industrial world would have been different from the industrial world, so students will need time to adapt in advance. Based on the study concluded that the implementation Prakerin in the industry go well or the whole school is in good category.

In the implementation, the Prakerin students will be monitoring by schools. As students carry out Prakerin teacher will monitor the implementation Prakerin into place. At the time of this monitoring students the opportunity to convey the problems with the constraints faced by the students to the teacher, besides teacher also monitors information from the industry towards student activities in the industry. From the research conducted found the schools that are in unfavorable category, is SMK N 5 Padang. Other schools such as SMK N 2 Sijunjung, SMK N 2 Payakumbuh, SMK N 1 Bukittinggi and SMK N 1 Pariaman are in good category. Student responses SMK N 5 Padang was a teacher at the moment less motivating monitoring and provide guidance to students. From interviews with teachers concluded, the monitoring carried out during the mid Prakerin implementation. Monitoring is only done once.

Prakerin activities that involve various stakeholders would pose obstacles and barriers for participants. Not all industries or company willing to accept Prakerin students. This is due to the company or the industry assessment of students who do Prakerin will disrupt the activities of the company or the industry. Another obstacle is the difficulty of adapting the student with the industry, so the students dont have the opportunity to try out and experience the world of industry is not well realized. From the findings of research conducted concluded many obstacles found when implementing Prakerin. Schools in good category just SMK N 2 Payakumbuh. Other schools such as SMK N 5 Bukittinggi, SMK N 2 Sijunjung, SMK N 1 Bukittinggi, and SMK N 1 Pariaman are in the unfavorable category. Most responded stated that because it difficult to interact with people in the industrialized world. Students are also not given the opportunity to recognize and try to operate equipment in industry world.

v. Students Competence Enhancement and Change Insights, Behavior and Emotions Student

Prakerin is one part of the curriculum in vocational school, every child at least prepare for prakerin for six months for attending vocational school, or at least a minimum of three months. This is a form of vocational schools treatment in ordering workforce. Prakerin aims to provide and also teach students to be and how life in the world of work. Through prakerin student should be able to understand how procedures and rules in the industry / business, so that when he eventually graduated he was really ready to work both scientifically, psychologically and mentally. Through prakerin least benefit to be taken by the vocational students are taught he would need passion and great discipline, as in the world of work. To determine the extent to which knowledge and science as well as the skills he had, so that he fullfill it when he had gone back to school. Teach him how the real life.

Prakerin should be something that is a priority for every SMK, to develop and create graduates who are reliable and ready to work, in accordance with the spirit of SMK itself, and to achieve prakerin with the desired objectives, the pre prakerin are required to held as an activities to provide preparation for students before plunging into the field. includes the preparation abilities, skills, attitudes, behavior, mental and administration.

Results of research conducted on the whole school already concluded in both categories. Results of interviews with teachers reveal students who are ready to implement Prakerin will be very different from the previous ones. In conducting the students practice more nimble and skilled in completing the task. Students are also more disciplined and responsible for what he did.

vi. Outcome (impact)

Real outcomes obtained after running the Prakerin is when students are given a certificate. This certificate contains the given value diindustri and combined with the value of the guidance counselor at the school. However prakerin certificates of the students and plus certificates obtained by the students after completing his education at the vocational school, has not yet deliver a good impact. This is due to the students feel the knowledge and skills possessed was not enough for work, either working as an employee in business and industry or civil servants as well as being an entrepreneurship. Therefore, the purpose of vocational education has not been achieved, because the graduates are not ready to work. The graduates (almost 70%) want to continue with a high keperguruan various reasons. Of course, one reason is the knowledge and skills possessed still inadequate.

This makes the impact of the image of SMK be declining in the eyes of stakeholders and the public. Most people or parents of students want them to work after graduating from vocational school. It turns out the students do not brave to go to work because the knowledge and skills possessed are insufficient. Eventually the parents will think twice to put children into vocational today. This condition is compounded by the lack of facilities and means to practice for students in their respective schools still lacking the number of students there, so it did not have sufficient opportunity to implement practices in school. Not to mention the technology advances so rapidly and new machines are more sophisticated. This machine is not owned by the school and to enable it will be costly. Therefore, the knowledge and skills of students are getting outdated. Moreover, the demands of business and industry are growing more and more.

Referring to the above conditions, the government hope to expand vocational with a ratio of : 60 vocational and 40 SMA (60: 40), but getting less response from the community or parents.

V. SUGGESTION

Suggestions can be put forward in connection with the findings of the research include: (1) Schools, students should be placed for prakerin in a company or industry that can managed it more professionally, (2) The need for well-prepared briefing material for prakerin to be more representative,

(3) review of the funding for prakerin, (4) clarify the role of the prakerin instructor, and (5) Increasing interest in entrepreneurship.

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