Analyzed and causal factor the 21st century leadership 4.0 of science educational for sustainable

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Abstract. Science educational were the key indicators of a capacity. Leadership 4.0 is a process that influences changes in the attitudes and assumptions of the personnel in the organization, creating a bond for change, have to an important objectives and strategies. This article aims to presented about to analyzed and causal factor 21st century leadership 4.0 of science educational for sustainable. Competencies to the 21st century leadership 4.0 of science for sustainable including leadership spirit and vision, morals and ethics, pursuing service, leader competency and evaluation. Skills to 21st century of science for sustainable including reading, writing, arithmetic, relation technology and innovation, relation qualitative, critical thinking, creativity, creative tension, critical proactively, communication, collaboration, collaborative cultural, competency, connecting, composition, controlling, cost effectiveness, empowerment, efficiency and effective, evaluation. Causal factor of the competencies and skills the 21st century are to affective of science educational for sustainable to direct influence was statistically significant at a level of .05 level. Also, the roles of leaders into science educational for sustainable as being a leader of setting direction and encouraging leadership, a planner and management, change and coordination, communicator and resolving conflicts.

Keywords: Competencies and skills, the 21st century leadership 4.0, science education

1. Introduction

The effectiveness of science education was to directing for an impact of the development for dimensions in humanism and society. Many countries were give education for national agenda to driving of planning in education system to successfully of human resource development to holistic, must to deeming for understanding to the various elements were a involved, and clarifying the context of the educational system to development vision of a consistent [1]. Thailand 4.0 to development were a security, wealth, sustainable must to a grand strategy for obviously into coping with the 21st century dynamics that a full of slides and changes in both geopolitics and world economics. One strategic framework for development was educational management strategies. In future of Thailand is a collaborative that driven for efficiency, the potential for mutual development and adapting to the context in the future. The 21st century education will be changing to affecting of lifestyle was avoided to learning, adaptability and preparation [2]. Science educational management is an important process and an ongoing activity. Managers are leaders in operations; the personnel cooperate seriously to achieve the goals, this is a mission of education organizations, the process alignment and approach to decentralized management of stakeholder to collaborative.
Leadership 4.0 is a process that influences changes in the attitudes and assumptions of the personnel in the organization, creating a bond for change, have to an important objectives and strategies. By leadership to related to the influence of the leaders on the followers, that influence empowers followers to become leaders and those who transform agencies in the process of science educational transformation [2]. Leadership efficiency requires for consistency and relationship with responsibility, leadership in academia, facilitation, consultation and coordination for all sectors to working together to achieve key achievement goals. Leadership is capable of bringing changes. An important for the success leaders to know what is element that will help leader to lead to effective leadership of attribute, empowerment and behavior [3]. Leadership is critical to the success of works and organization including the process of influence that one person tries to influence others of behavior in desired direction. Thailand needs to be prepared were accommodate for economic opportunity to happening of educational development. If we never prepare them, it will cause loss of opportunity of socio-economic, Socio-cultural and Socio-educational. Sanders et.al. [4] argued that an important to accelerate the process, the success will happen of strategy of goals, means, target and indicators. Therefore, leadership is viewed as a holistic process and involves the actions of leaders at different levels. The behaviors of leadership there are transfers of important duties, responsibilities and powers as well as eliminating unnecessary work restrictions [5]. Leadership 4.0 of science educational for sustainable to care for and teach followers the skills they need to develop and solve problems, initiate and motivate important decision-making participation, stimulating thought competition, awareness of relevant information, promoting cooperation and teamwork, promoting creative problem-solving in the management of education that emphasizes and creates values, including the main objectives of science education management to be effective and sustainability. The management process of the 21st century leadership 4.0 of science educational for sustainable that include the competencies, skills and efficiency to improving the quality and performance of paradigm shift, leadership enhancement, change of learning cultural in the strategies allow organizations to setting of concrete goals and objectives for effectively. Research objectives aimed to analyze the 21st century leadership 4.0 of science educational for sustainable of competencies and skills, and to a causal factor the 21st century leadership 4.0 of science educational for sustainable.

2. The 21st Century Leadership 4.0 of Science Educational for Sustainable Frameworks

The 21st century leadership 4.0 of science educational for sustainable framework of the contents. Also, the leaders have certain qualities, are different from his followers and that quality can encourage leaders to be successful. However, still cannot confirm that the above characteristics that can really affect the effectiveness of leaders in the organization, the study of leadership characteristics therefore becomes less important and leads to the search for effective leadership which result from the behavior of the leader himself, by calling this study method of behavioral leadership theory and the study of leadership developed further concepts, namely, situational or contingency leadership theory to the mention of effective leadership behavior will change according to the situation, isn’t an attached of any behavior only [6]. Being as well as leadership depends on the circumstances. In solving administrative problems, there is no best way, depending on the situation, decides what method to use in that situation, besides the efficiency depends on the management style of the leader that can control the operation much and the study of leadership also develops into education and that power will arise when motivating followers to satisfy [7]. The characteristics leadership 4.0 to effectively are to, 1) leading the transformation of the organization, that is responsible for better goals and inspire people to perform their work successfully, 2) being courageous, open and taking a stand, as well as being courageous to face the truth, 3) believing in oneself and colleagues that they are capable of performing their work to achieve their goals, 4) use value as a driving force to guide followers to realize the value of their goals, and create operational drive to achieve valuable goals, 5) a lifelong learner and learns new things for continuous self-improvement, 6) has the ability to face complexity, ambiguity and
uncertainty as well as having the ability to face ever-changing problems, 7) a foresight with the ability to anticipate forwards to opportunities and obstacles that arise, include able to make the hopes and dreams of the team come true. Leadership 4.0 of science educational for sustainable is a matter of collaborative a driving towards goals, by leadership competencies include the ability to drive oneself and others to work and to serve as a common cause. However, when entering the 21st century, science educational will have to face drastic changes as a result of technological advances, the world of information and a competitive environment without borders, economic crisis and limited resource conditions. Educational leaders must be visionary with a commitment to the public service. And have the ability to motivate people to use their potential, work for maximum results, build a learning management network to learners, communicate with teaching personnel with good feelings for each other, as well as being a person with managerial skills in order to achieve the highest results of work [8]. From the analysis of the situation and the search for the core competencies of educational leaders including a leading change, leading people driven, and results driven. Ability to the 21st century leadership 4.0 of science educational for sustainable of competencies and skills were the ability to develop a vision arising from the integration of important goals of education management, teaching and learning management, learning activities [9]. From a bringing vision to action to achieve results to the balance is constantly changing as desired focus under a key factors that will lead to the competencies and the skills (e.g., continual learning into important new knowledge, technology knowledge, and general knowledge of self-development recognizing one's strengths and weaknesses using feedback and opportunities from others to develop new knowledge, creativity and innovation to the development of new things in education and learning management that apply innovation to solving problems, creating an environment that promotes creativity and innovation).

By designing and modifying new programs/processes for use in science educational for sustainable of teaching and learning. Office of the National Economic and Social Development Board [10] mentioned that presented to education under Thailand 4.0 in the 21st century are four major objectives in education to, a) develop to effective education system and process, b) develop to good citizen with desirable characteristics and the skills, c) develop to knowledge-based society living with moral and in harmony for the sustainable, d) bring Thailand overcome the “middle income” and “inequality” traps. Science educational can bring knowledge in every place to integrate creatively, for develop innovations to meet the needs of society. The consistent with future mission, improving the quality of education and organization into systematic management of the knowledge and competency include operational skills, follow-up, evaluation. Education a Thailand 4.0, there is a “Key” in six dimensions of science leadership 4.0: achieve policy goals dimensional, management dimensional, ability dimensional, person dimensional, development dimensional, and integration dimensional [7], [16], [17]. The goals of science educational management to the learners by aiming learners development to have characteristics and learning skills in the 21st century. The ability of science educational management of the 21st century leadership 4.0 that show responsibility for the quality of educational standards with efficiency and effectiveness, providing opportunities for all sectors with potential readiness to participate in the implementation of various forms of education, developing suitable quality and performance of assessment systems to consistent with the context and needs of society to enhance the quality of science educational in the dimension of building a learning society to be strength to shown on figure 1.
Figure 1: A enhance to the quality of science educational in the dimension of building a learning society

a) Science educational security dimensions: the cultural society and education under the 21st century, connection and operation to lay the foundations and mechanisms, it must start with education management process, solving problems affecting education management. A need to be transformed through educational management to cover the main points of a “key” as the goals, methods, processes and strategic plans towards action plans that affect efficiency into consciousness, knowledge and abilities, skills, attitudes, values and behaviors of the science educational quality.

b) Science educational wealth dimension: building capacity, competencies, skills and knowledge, using and accessing an integrated technology for developing skills and knowledge, development of curriculum that builds vital skills in the 21st century, development of information systems and innovations that are conducive to learning, promoting teaching and learning through scientific processes, human resource development and training that focus on practicality, skills, characteristics and competencies, including development of educational management to accommodate the dynamics of the world and the 21st century.

c) Science educational sustainability dimension: a continuous learning society, development of learning resources for building a learning society through the development of various learning resources, encouraging all sectors to take part in educational development, promote and support education through digital technology to create lifelong learning, develop systems and mechanisms for effective monitoring, measurement and evaluation, and creation of attitudes and awareness in sustainable science education management.

The 21st century leadership 4.0 of science educational for sustainable frameworks were competencies to the 21st century leadership 4.0 of leadership spirit and vision, morals and ethics, pursuing service, leader competency and evaluation, and the skills to science educational for sustainable of reading, writing, arithmetic, relation technology and innovation, relation qualitative, critical thinking, creativity, creative tension, critical proactively, communication, collaboration, collaborative cultural, competency, connecting, composition, controlling, cost effectiveness, empowerment, efficiency and effective, evaluation towards analyzed and synthetic into the elements and indicators of competencies the 21st century leadership 4.0 and the skills science educational for sustainable. what happen the elements and indicators to should look like? How a causal factor of the competencies and the 21st century skills are to affective of science educational for sustainable?

3. Research Methodology
Research methodology of this study was a mixed method research which combined both qualitative and quantitative methods. The qualitative methods to analyze the 21st century leadership 4.0 of science educational for sustainable of competencies and skills into the elements and indicators was a
documentary review, and collected by participatory action learning through brainstorming and by interview questionnaire with the participants of key informant. The quantitative method was a survey by questionnaire into a causal factor of the competencies and the 21st century skills are to affective of science educational for sustainable with the participants of the samples.

3.1 The Participants:–

The participants of the results that will be used in this study into qualitative research with the key informants there were the educational personnel (i.e., cluster heads, directors of educational service area office, school administrators and science teachers) of 50 persons, they all were by purposive sampling and focus groups. The samples into quantitative research were 599 school personnel from four regions. There were 92 (15.36%), 146 (24.37%) 151 (25.21%) and 210 (35.06%) school personnel from the Southern, Central and Eastern, Northern and Northeast regions, respectively. Participants they all were multistage random sampling.

3.2 Materials Methods:–

The materials methods of research tools used to collection data include the interview questionnaire of structure into the 21st century leadership 4.0 of science educational for sustainable of competencies and skills. And questionnaire of semi-structure of 5-ratting scales in the question to selected into a causal factor of the competencies and the 21st century skills are to affective of science educational for sustainable. There are to item of objective congruence (IOC) of 1.00, and to the confidence value of the whole questionnaire of 0.83.

3.3 Collection Methods:–

Respondents were asked to respond to the qualitative data came from documentary study a together with participatory action learning by brainstorming and in-depth interviews by interview questionnaire with key informant are to the educational personnel (i.e., cluster heads, directors of educational service area office, school administrators and science teachers) for analyzed and synthetic into the elements and indicators of competencies the 21st century leadership 4.0 of 4th elements including leadership spirit and vision, morals and ethics, pursuing service, leader competency and evaluation, and the skills of the 21st century of science for sustainable of reading, writing, arithmetic, relation technology and innovation, relation qualitative, critical thinking, creativity, creative tension, critical proactively, communication, collaboration, collaborative cultural, competency, connecting, composition, controlling, cost Effectiveness, empowerment, efficiency and effective, evaluation. Quantitative data collection was a questionnaire survey to a causal factor of the competencies and the 21st century skills are to affective of science educational for sustainable with the samples of school personnel from four regions were selected in the data collection.

3.4 Inquiry Methods:–

In the issues of the qualitative to analyze the 21st century leadership 4.0 of science for sustainable of the competencies and skills. The information will be analyzed through three main stages including data reduction to be able of coding to classify qualitative variables for enumerate the frequency, data organization are classification of variables and grouping of variables to elements or dimensions of conceptual then the elements are grouped into ideas, call this method of indicator-concept model, data interpretation are identifying directions and trends of relationships between concepts, by explaining and interpreting the logical relationship to conclusion. The quantitative to a causal factor of the competencies and the 21st century skills are to affective of science educational for sustainable was analyzed by descriptive statistical analysis including percentage, mean, standard deviation. Also, the structural equation modeling (SEM) of inquiry methods.
3.5 Data Analysis:-
The data was collected in order to analyze the issues of the qualitative data was analyzed by using three main stages, i.e., data reduction, data organization, and data interpretation to conclusion. The quantitative data was analyzed by descriptive statistical analysis including percentage, mean, standard deviation, and structural equation modeling.

4. The Findings
The analyze and causal factor the 21st century leadership 4.0 of science educational for sustainable were followed:

4.1 Competencies to the 21st century leadership 4.0 of science educational for sustainable:-
The competencies to the 21st century leadership 4.0 of science educational for sustainable including leadership spirit and vision, morals and ethics, pursuing service, leader competency and evaluation they all were the elements and indicators to all aspects of were shown in the table 1.

| The Competencies                        | The Indicators                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Leadership Spirit and Vision            | - The leaders hold and attention to subordinate personnel, dedicated in his duties and focusing the effectiveness of the work, personnel, organization, include attention to maintain quality personnel to stay with the organization as long as possible, creating incentives and showing leadership potential using various techniques in order to achieve the achievement of the organization's goals. From the planning, organization, coordination, communication, and performance evaluation, and keeping personnel working together, and achieving job satisfaction. By being brave enough to have the initiative to create new things and is a good role model from the courage to think, to make decisions, to have a strong mind, the power of thinking in creating jobs.  
- Setting goals for anticipation through paradigms and the wide vision can lead the subordinate personnel to move forward, and create cooperation for all personnel to achieve their goals for success, increasing the potential of personnel, a support to become a good leader in the future. Including able to transform the vision into real work operations until achieving the most success and building cooperation of teamwork to enable personnel to cooperate, join forces, join hands and helping with service work as well as allowing followers to open up new worlds. |
| Morals and Ethics                       | - Performance of empowered leaders, fair, honest and have a good governance principles, adherence to accuracy and being faithful including with honesty, responsibility, patience. Understanding and being compassionate, decisions based on good principles and reasons, an expression of sincerity and attention in all the feelings of teamwork.                                                                                                                                                                   |
| Pursuing Service                        | - Focusing the common, conducting service as a service provider that aims to manage personnel and others from the attentive service allocate relief and help to get the most benefit, providing assistance and personnel support from being the coordinator in the organization to achieve smooth work and aim for efficiency at work. As well as coordination outside the organization to create a network of collaborative ideas to manage, reconciliation when problems occur, public relations and helping colleagues, continuous development, allowing everyone to progress and bring the organization to its destination. |
| Leader Competency and Evaluation        | - Ability to formulate strategies for personal and organizational development, the ability to lead oneself, lead others, and lead the organization to be the leader of change as an opportunity, knowing how to find the right change and how to create change effectively (e.g., future building policies, systematic ways to look for and anticipate changes, the correct way to become familiar with both internal and external changes, the policy of creating a balance between change and continuity), systematically creating new things that can raise awareness among personnel and to see that change is an opportunity that is emerging, the efficiency and effective use of technology.  
- Should emphasize the use of authentic assessment in order to inform their reasonable decision-making. A variety of methods to assess and sources of data must be used in the authentic assessment process in order to generate possible solutions or ways of a specific problem. |
4.2 Skills to the 21st century of science educational for sustainable:

The skills to the 21st century of science educational for sustainable include reading, writing, arithmetic, relation technology and innovation, relation qualitative, critical thinking, creativity, creative tension, critical proactively, communication, collaboration, collaborative cultural, competency, connecting, composition, controlling, cost effectiveness, empowerment, efficiency and effective evaluation. All these elements and indicators were shown in Table 2.

Table 2:- Twenty the skills to the 21st century of science educational for sustainable

| The skills                        | Indicators                                                                 |
|-----------------------------------|-----------------------------------------------------------------------------|
| Reading                           | Understandable, to summary as well as the analytical and critical thinking, the opinions rationally and creatively applied. |
| Writing                           | Clear of the author chooses to write meaningful pronounced.                  |
| Relation science                  | Understood and embraced of the concepts, scientific principles applied, and to understand and recognize the value in the relationship of the science and technology. |
| Arithmetic                        | Needed of developing to effective solutions.                                |
| Relation technology and innovation| Working knowledge applications to enhance the efficiency and effectiveness of the work in its way, including the process, product and infusing of process and product. |
| Relation qualitative              | Building of the quality, an important of the management in organizations to work together seriously. |
| Critical thinking                 | Ability to identify a subset of the content that contains stories or anything, how important, and what is logical and that the principle of nothing. |
| Creativity                        | Thinking and finding of the solutions create new attitudes, including understanding and look at the problem in a new way. |
| Creative tension                  | Effort to achieve a gap between the current reality and what to expecting, that may be a hurdle of the vision which can to snag a source of creativity known as the tension of creativity. |
| Critical proactively              | Working with future planning and goal to focus for mission operations were quickly of cost and quality. |
| Communication                     | Broadcast news, information, knowledge and experiences, feelings and opinions. |
| Collaboration                     | Working with others of various fields, in order to the goals of organization for willingness to achieve of the same objective. |
| Collaborative cultural            | Sincerity and selflessness as well as the generosity and caring.            |
| Competency                        | Ability for generate performance of responsibilities.                      |
| Connecting                        | The process continues.                                                     |
| Composition                       | The security does not to change easily and comply with requirements.        |
| Controlling                       | Examination to determine for the performance objectives and gold's.         |
| Cost effectiveness                | Use of the resources to benefit and the most rewarding.                    |
| Empowerment                       | Science leadership change is good and adjust work processes to achieve effectiveness. |
| Efficiency and effective          | Ability to complete the task, whether it is achieving success in the form of policy or mission and objective. |
| Evaluation                        | Information from the introduction of the measure, including the use of assessment used in the decision. |

4.3 Causal factor of the competencies and the 21st century skills are to affective of science educational for sustainable:

Causal factor of the competencies and the 21st century skills are to affective of science educational for sustainable to an influence analysis were shown in the figure 2, and table 3.
Figure 2:- Influence analysis of a causal factor of the competencies and the 21st century skills are to affective of science educational for sustainable.

Table 3:- Coefficient of influence analysis of a causal factor

| Variable Cause | Result variable |
|----------------|-----------------|
|                | Competencies    | 21st century skills |
|                | DE  | TE  | DE  | TE  | DE  | TE  |
| The competencies | -  | -   | 0.67* | -   | 0.67* |
| 21st century skills | 0.65* | -   | 0.65* | 0.16* | 0.42* | 0.58* |
| 21st century leadership 4.0 of science for sustainable | 0.26* | -   | 0.26* | 0.04 | 0.17* | 0.23* |
| R²             | 0.70 | 0.74 |

Causal factor of the competencies and the 21st century skills are to affective of science educational for sustainable to direct influence of the competencies and the 21st century skills was statistically significant at a level of .05 level, coefficient of influence were 0.65, 0.26 respectively. Cause variables for the competencies was percentage at 70 percentage. The competencies and 21st century skills were direct influence of the 21st century leadership 4.0 of science educational for sustainable was statistically significant at a level of .05 level, coefficient of influence were 0.67, 0.16 respectively. The 21st century leadership 4.0 of science educational for sustainable to cause variables for the competencies and 21st century skills was statistically significant at a level of .05 level, coefficient of influence were 0.42, 0.17, respectively. All causes variables together of the 21st century leadership 4.0 of science educational for sustainable was percentage at 74 percentage.

5. Discussions
Leadership 4.0 is process that influences changes in attitudes and assumptions of the personnel in the organization, have to an important objectives and strategies. Competencies to the 21st century leadership 4.0 of science for sustainable including leadership spirit and vision, morals and ethics, pursuing service, leader competency and evaluation. Skills to the 21st century of science for sustainable of reading, writing, arithmetic, relation technology and innovation, relation qualitative, critical thinking, creativity, creative tension, critical proactively, communication, collaboration, collaborative cultural, competency, connecting, composition, controlling, cost effectiveness, empowerment, efficiency and effective, evaluation. Causal factor of the competencies and the 21st century skills are to affective of science educational for sustainable to direct influence of the competencies and the 21st century skills was statistically significant at a level of .05 level. Because the 21st century leadership 4.0 of science educational for sustainable are different from his followers and that quality can encourage leaders to be successful. Leadership 4.0 to effectively are to leading the transformation of the organization, that is responsible for better goals and inspire people to perform their work successfully, being courageous, open and taking a stand, as well as being courageous to face the truth, and believing in oneself and colleagues that they are capable of performing their work.
to achieve their goals including to use value as a driving force to guide followers to realize the value of their goals, and create operational drive to achieve valuable goals. Chen et al. [11] mentioned that conceptual action it includes ways to conceptualize action works and the direction setter and leader—catalyst to the goals organization, understanding of the organization objectives and mapping ability, project base, towards the objective, goal and achievement of the management, moral ability and empowerment of personnel organization and science teachers' team work for science educational of teaching and learning to successfully. Noo Liang et al. [12] presented of the teaching and learning to a lifelong learner and learns new things for continuous self-improvement, has the ability to face complexity, ambiguity and uncertainty as well as having the ability to face ever-changing problems, a foresight with the ability to anticipate forwards to opportunities and obstacles that arise, include able to make the hopes and dreams of the team come true. Creativity and creative tension of thought that expresses the new meaning independently, courage to take the initiative, cultivate and encourage creativity by asking, and given to the opportunity to think in the answer from the acceptance of others. Generate new ideas is the way to solve the problem into combination or selection and alternative to create as the answer or the best choice to solve the problem. Plenjit [13] suggested about a brainstorming that one technique to solve a problem that encourages people to have a variety of ideas, imagine being in a limited time. Without regard to the assessment of ideas but focus on the amount of thought after gathering ideas, evaluate, pick the best ideas to solve problems. The involvement to the strengthen education of the network partners that links from all sectors to participate, and explained the development concept with indicators and member participation, namely to have common problems, shared needs, a common interest, and cooperation in working according to their aptitude, as well as sharing the principles of mutual benefits based on justice. Enhancing the education level to develop learners, by creating innovative education and learning environments, including new approaches in driving the learning culture. Phangthai [14] mentioned that processing participation management to helps to increase the ability of each individual, increase organizational learning ability, adaptation and development to excellence [15]. Participation management for enhancing effectiveness educational quality to sustainability are to encouraging all learners to have an opportunity to receive thorough educational services and have to equal and included support the use of educational technology to cover and enhance environmental awareness, having morality, ethics, and inspiring learners to be enthusiastic about learning, having a creativity that can lead to goals and can find one's own potential into the manner of broad-based and holistic learning, through the development process of cooperation and participation from all parties involved in science education.

**Implications:** The 21st century leadership 4.0 of science educational for sustainable were the guidelines for enhancing effectiveness educational quality to sustainability by emphasis on building important foundations for cultivation of thinking processes into creating connection for education and work. With the key principles of participatory management were creating a democratic working atmosphere, opportunity for participants to express their opinions and participate to decisions and responsibilities, these will make the participants understand the problems of the educational organization. And rewarding with honorable praise will be important motivation that gives operators to the power of working include when successful the practitioner is proud. An involvement to the strengthen education of the network partners that links from all sectors to participate, and explained the development concept with indicators and member participation, namely to have common problems, shared needs, a common interest, and cooperation in working according to their aptitude. Enhancing the science educational level to develop learners, by creating innovative education and learning environments, including new approaches in driving the learning culture. Roles of leaders into science educational for sustainable as being a leader of setting direction and encouraging leadership, a planner and management, change and coordination, communicator and resolving conflicts.
6. Summaries

A causal factor the 21st century leadership 4.0 of science educational for sustainable of summaries were followed:

The competencies to the 21st century leadership 4.0 of science for sustainable were to, 1) leadership spirit and vision as The leaders hold and attention to subordinate personnel, dedicated in his duties and focusing the effectiveness of the work, personnel, organization, include attention to maintain quality personnel to stay with the organization as long as possible, creating incentives and showing leadership potential using various techniques in order to achieve the achievement of the organization's goals, Setting goals for anticipation through paradigms and the wide vision can lead the subordinate personnel to move forward, and create cooperation for all personnel to achieve their goals for success, increasing the potential of personnel, a support to become a good leader in the future. Including able to transform the vision into real work operations until achieving the most success and building cooperation of teamwork, 2) the morals and ethics as the performance of empowered leaders, fair, honest and have a good governance principles, adherence to accuracy and being faithful including with honesty, responsibility, patience, 3) pursuing service as focusing the common, conducting service as a service provider that aims to manage personnel and others from the attentive service allocate relief and help to get the most benefit, providing assistance and personnel support from being the coordinator in the organization to achieve smooth work and aim for efficiency at work, and 4) leader competency and evaluation into ability to formulate strategies for personal and organizational development, the ability to lead oneself, lead others, and lead the organization to be the leader of change as an opportunity, knowing how to find the right change and how to create change effectively, use of authentic assessment in order to inform their reasonable decision-making. The skills to the 21st century of science educational for sustainable were to, (1) reading of understandable, to summary as well as the analytical and critical thinking, (2) writing to clear of the author chooses to write meaningful pronounced, (3) relation science of understood and embraced of the concepts, scientific principles applied, (4) arithmetic to needed of developing to effective solutions, (5) relation technology and innovation of a working knowledge applications to enhance the efficiency and effectiveness of the work, (6) relation qualitative of building of the quality, an important of the management in organizations to work together seriously, (7) critical thinking of ability to identify a subset of the content, (8) creativity of thinking and finding of the solutions create new attitudes, (9) creative tension was effort to achieve a gap between the current reality, (10) critical proactively of working with future planning and goal to focus for mission operations were quickly of cost and quality, (11) communication to broadcast news, (12) collaboration of working with others of various fields for willingness to achieve of the same objective, (13) collaborative cultural to selflessness, (14) competency was ability for generate performance of responsibilities, (15) connecting as the process continues, (16) composition to comply with requirements, (17) controlling for examination to determine for the performance objectives and gold’s, (18) cost effectiveness to use of the resources to benefit and the most rewarding, (19) empowerment was adjust work processes to achieve effectiveness, (20) efficiency and effective of ability to complete the task, mission and objective, (21) evaluation as information from the introduction of the measure, including the use of assessment used in the decision. Causal factor of the competencies and the 21st century skills are to affective of science educational for sustainable to direct influence of the competencies and the 21st century skills was statistically significant at a level of .05 level.

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