

Analysis of 21st-Century Leadership in Higher Education Management

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Abstract—This research aims to describe and analyse 21st-century leadership in higher education. It is important to be continually studied to become an example in implementing in Indonesia higher education generally and similar higher education specifically. While for the specific aim, this research will be developing research in current leadership science. For the method used in this research is a descriptive-analytical method using a qualitative approach. Primary data is obtained from informant through in-depth interview with the leaders in the Indonesia University of Education, observation and regulation documentation, while secondary data is obtained from questionnaire spread to 24 heads of department in the Indonesia University of Education. The research result shows that the competencies which must be had by the 21st-century leader in higher education management are skills of Communication, Collaboration, Critical Thinking, Creativity, Corporative, Integrator, Developer, Entrepreneur, or researchers abbreviate to 5C IDE.

Keywords—21st-century leadership; higher education management

I. INTRODUCTION

Entering the new era in 21st century, higher education system in Indonesia have to be perfectly manifested by certain characteristics such as; 1) university student's need, national priority and economic development, 2) structurize effectively, so gives a chance for all citizens to develop their lifelong potency and contributes to society, nation and state, 3) it is supported by the sufficient fund, so it is possible to innovate and achieve excellence, 4) conducts research which can support national development, 5) has an access in developing and implementing technology, 6) has a role as a moral power in realizing democratic civil society. Therefore, higher education has to have whole and comprehensive institutional credibility. The system must have such as high accountability towards society, shows efficiency in its operational, develops a qualified graduate, has internal management which is transparent and meets the standards. The occurred challenges and phenomenons affect on the human characters in this 21st century.

In accordance with explanation above, Zamroni formulates that higher education entering the 21st century experiences

paradigm-shifting from terminal learning to lifelong learning, from science-focused learning to holistic learning, from image of confrontative lecturer-student relation to partnership relation, from lecturer emphasizes scholastic knowledge (academic) to emphasizing the balance of value education focus, from lecturer isolation performance to teamwork performance, from exclusive concentration on competency to teamwork orientation [1]. All of these are illustrated in the figure 1.



Fig. 1. Paradigm of future education [1].

In this digital era, higher education cannot only discuss all problems which are faced by Indonesia but also discuss the global matter, so higher education can compete. An advantage of higher education is not valued by the number of buildings, facilities, lecturers and students. The main thing is the higher education can produce human resources who have the competency and highly competitive in the national or global level [2].

The higher education faces several important challenges in the international, national and institutional level. In the international level, there are two main challenges. The first challenge is the role of a supranational organization such as

UNESCO in developing prospect trend and improvement, and promoting network program and twin's institution. European Union, for instance, has emphasized that the higher education has to change and adapt to the need of economic and social, institutional change is vital for education innovation, and information and communication technology has to be a part of the learning process [3]. The second international challenge is to push international cooperation between institutions for cross-border sharing knowledge and facilitates collaboration. Moreover, it is a vital element for the development of the planet earth and post-cosmopolitan citizenship [4]: assumption of interdependence "deterritorialization", participation, joint responsibility, and solidarity among the citizens of the planet earth.

Facing all different challenges in every step and change in this globalization, the leader in higher education has to maintain and adjust to every challenge in each century. The leaders currently have to differently behave because they need to develop practical and knowledge skill which is important to develop in the 21st economic global driven by the knowledge. For instance, they have to be a better listener and skilled agent of change who can trigger persuasive reason for gaining followers to support their agenda. Besides, the leaders have to be a great team player as well as relationship initiator and create a motivated working environment to boost worker productivity [5]. On this 21st century, the leaders also are required to be skilled in packaging and innovating information technology. Therefore, the emerging of science development which one of them is 21st-century leadership.

Besides the skill in operating and understanding information technology, in this 21st century is also required to have a personal skill such as networking, high confidence, language skill, integrity, etc.

The 21st-century leadership is started from the perspective that public leader has to exactly and wholly know either himself or condition and society's aspiration [6]. The development and strategic environmental issue faced in a variety aspect of life and paradigm as well as organization and management system in which he takes a role. The leader responsibility is to give a wise, effective, and productive answer for the variety of problems and challenges faced in his era done together with the people he leads. Therefore, every leader needs to fulfil certain competency and qualification.

The 21st-century leadership requires an individual to conduct a planned change, has a vision and mission, strong influence for achieving common goals then can motivate his co-worker in the higher education organization. Leadership and education in 21st century organization: the 21st century organization needs "21st century education program", and all education leaders in every level have to develop skill and knowledge for leading all stakeholders to adopt the 21st century learning, as well as a learning method to empower student (leader candidate) by the 21st century knowledge and skill [7]. It happens because wherever part of the world the students live, they always connect with other people "around the world" through the internet, social media, and information technology. Hence, the role of leader and manager in the 21st-century organization becomes more complex due to the

globalization of education, politic, and practical dynamic of global business.

They are in a position which is required becoming fluent with theory, principle, and leadership practice and management because they are part of the process of social and economic development [8]. These theories when it appropriately applies in daily practice, it can conserve protocol and guide all leaders and managers for continuity of the 21st-century organization.

The 21st-century leadership is also required to have a high work ethic by continually upgrading the knowledge and information that people have as well as constantly hone the information technology skill. Therefore, they can easily follow the progress and can analyse a reformation of higher education organization in this era. Based on phenomenon and point regarding the 21st-century leadership as explained above, researchers are interested to analyse what kind of leadership which is suitable to implement in the 21st century higher education.

II. RESEARCH METHODOLOGY

The used method in this research is descriptive-analytical using a qualitative approach. The writers choose descriptive method research using qualitative approach because they want to conduct in-depth assessment regarding the higher education competitiveness in which data is presented using description, and in this condition, it is also needed analytical study in order to contemplate what kind of leadership in the 21st century which can be applied in higher education management.

This method aims to systematically, factually and accurately illustrate a factor, fact and trait as well as the relation between the researched phenomenons. The method is also aimed to solve the current emerging problem in which the descriptive method helps the researchers to obtain observation data which can support primary data. A qualitative method is interpreted as a research procedure which produces descriptive data such as written or spoken words from people and behaviour in the study [9].

In this case, the main focus is to deeply study regarding the implementation of higher education particularly the implementation of the 21st-century leadership, so the needed participant is all higher education leaders in which it is expected that all the leaders can give information regarding the 21st-century leadership implemented by leaders in the higher education process.

The participant in this research is divided into primary and supporter participant. For the primary participant in this research is Vice-Rector for Academic and Student Affairs, Vice-Rector for Research, Partnership and Entrepreneurship, and Head of Research and Community Service (in Bahasa: Lembaga Penelitian dan Pengabdian Masyarakat / LPPM) in the Indonesia University of Education (in Bahasa: Universitas Pendidikan Indonesia / UPI). While the supporter participant is 24 heads of study programs which is in the post-graduate program in the Indonesia University of Education (particularly A-accredited program). It is chosen by the writers because they assume that in the post-graduate programs have represented every study program in each faculty. This participant is chosen

for giving an in-depth description regarding the 21st-century leadership and its relation with the higher education management.

Collecting data is conducted by interview, observation, or documentation for obtaining complete data [10]. The interview is conducted to the leaders of UPI such as Vice-Rector for Academic and Student Affairs, Vice-Rector for research, partnership and entrepreneurship, as well as Head of Research and Community Service.

The interview of Vice-Rector for Academic and Student Affairs is needed to obtain in-depth information regarding three pillars of higher education done by the students and the implemented innovations in an academic system.

The next interview is conducted to the Vice-Rector for Research, Partnership and Entrepreneurship. The informant is needed to give the data how far the Indonesia University of Education gets a position, university competitiveness and development programs.

A further interview is done to the Head of Research and Community Service in which two functions from three pillars of higher education such as research and community service is done under the leadership of the Head of Research and Community Service. The information or data which will be reviewed is how the innovation, as well as research and community service implementation, can support the higher education competitiveness.

Besides the interview, the researchers also conduct observation and documentation study in collecting the data. The observation is conducted using a checklist questionnaire spread to sample (supporter participant) such as the Head of Accredited study program in the UPI post-graduate program. Then, the documentation study is done to give additional data such as documents which are needed to support in processing data research.

III. RESULTS AND DISCUSSION

A. Results

The leader's understanding in the Indonesia University of Education regarding the concept of the 21st-century leadership is vital both in the rectorate management and among the study program heads. The era that they live in is the 21st century. Hence, every era will have a different color of leadership. The success of an institution or university will be reflected and remembered by society and people in its environment because "Who is the leader?" "What is his achievement?" "What is like in his era when he leads?". Therefore, every leader needs to understand what is leadership. Based on the interview result in the Indonesia University of Education, the meaning of the 21st-century leadership is:

The 21st-century leadership is the leadership supported by digitalization and directs on millennial and artificial intelligence era which is no longer use a manual and traditional thing. *(Vice-Rector for Academic and Student Affairs of UPI)*

Based on the interview result with Vice-Rector for Academic and Student Affairs that 21st-century leadership is compulsory for everyone who is currently a leader. The Vice-Rector adds that the 21st century is computation, technology and digital era. It is also said by the Vice-Rector for Research, Partnership and Entrepreneurship regarding the 21st-century leadership. The Vice-Rector says as follows:

The 21st-century leadership is a leader who can answer the 21st-century challenges, can survive and adapt on Millennial era by the characteristic of the 21st century which is 4C (communication, collaboration, critical thinking, creativity) and can solve the faced problems in line with the people's need. *(Vice-Rector for Research, Partnership and Entrepreneurship of UPI)*

The 21st century is different from the previous century in which university has to adjust and adapt to the occurring change in its era, and in the 21st century, digitalization is needed in university activities. For instance, the learning process needs online and IT facility because currently, the learning process has begun to cross country and cross border known as blended learning which requires on a mobile phone or mobile learning in its learning process. *(Vice-Rector for Research, Partnership and Entrepreneurship of UPI)*

The 21st-century leader has to be able to awaken and inspire all people that he leads. he can continually adapt and improve his ability to face the demands and changes in his environment. *(Vice-Rector for Research, Partnership and Entrepreneurship of UPI)*

The Vice-Rector for Research, Partnership and Entrepreneurship state the current leadership problem and problem in the next century will have different characteristic, and it is impossible to use an old way. Therefore, the Vice-Rector says in the interview that the 21st-century leader is the leader who has the required skill and capability in this era. He said that 4C is the ability which has to be had by the 21st-century leader. A similar idea is had by the Head of Research and Community Service UPI who states that 21st-century leadership is as follows:

The leader has to have competencies and meets the 21st-century challenges as well as he has skill and creativity as well as collaborative. *(Head of Research and Community Service UPI UPI)*

The opinion mentioned above is similar to the statement of UPI Vice-Rector for Academic and Student Affairs. The characteristic of 21st-century leadership is leadership in line with the required skill in the 21st century. The informant says that characteristic from the skill is two such as creativity and collaboration.

Based on the data from the interview, the writers conclude that 21st leadership is leadership which can adapt to every challenge and skill in the 21st century, for instance, a digital challenge. The characters which have to be had by the leader are communication, collaboration, critical thinking, creativity

and artificial intelligence skill and can encourage and motivate his subordinate to make a change.

1) *Implementation of the 21st-century leadership on UPI's leaders:* Certainly, in the implementation, not all leaders can competently lead in an institution based on its organization characteristic or challenge in its era. It is caused by several factors such as different characteristic, the leader openness on change, and the factor of age. Those factors will have an impact on leadership pattern in every leader. The 21st-century leadership is the leadership which will certainly give different leadership from previous leadership while the leader's character in the Indonesia University of Education is also differentiating. Therefore, based on the conducted interview on several interviewees, the interviewees give argumentation regarding the implementation of the 21st-century leadership.

Most of the leaders at UPI have implemented the 21st-century leadership system. However, the implementation process is still gradual because not all the leaders are born in this era. Hence it still needs an adjustment specifically in the implementation of IT-based management information. (Vice-Rector for Academic and Student Affairs of UPI)

The implementation of the 21st-century leadership in the Indonesia University of Education is classified as not all apply it because there are leaders who are born long before the 21st century, therefore, they cannot pursue challenges and fulfil the existing skills in the 21st century. (Vice-Rector for Research, Partnership and Entrepreneurship of UPI)

From the interview result, the interviewees say that in the implementation of the 21st-century leadership in the Indonesia University of Education is not 100% maximal because both interviewees say the diversity ages among leaders of UPI which make all of them cannot adapt to the 21st challenges and skills. The implementation of the 21st-century leadership in the Indonesia University of Education can be described based on the observation result done by the researchers through checklist questionnaire spread to 24 head of post-graduate programs in the Indonesia University of Education. However, in the collection up to the deadline, there were only 17 questionnaires returned and can be processed in this study. The description trend of 21st-century leadership can be illustrated in the figure 2.

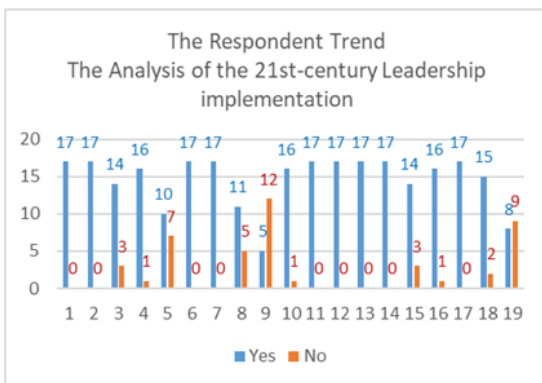


Fig. 2. The trend of 21st-century Leadership Implementation in UPI.

An analysis of the 21st-century leadership application is conducted to provide an overview of all leaders of UPI by the respondent characteristics who have a good level of leadership. It can be seen from the study program's accreditation that those who have A-accreditation title are successful leaders in dealing with challenges and change in their leadership era and can improve the quality of their study program. The used observation questionnaire was a checklist questionnaire with yes and no answer choice. Therefore, it can be seen that even though every leader can improve his study program quality by improving accreditation predicate. The graph above shows diversity in answering each question that contains the implementation of 21st-century leadership.

The 19 given questions in the questionnaire contain a dimension of the 21st-century leadership. Hence, the questionnaire will give an idea regarding how far UPI has applied the 21st-century leadership. The used dimensions in the 21st-century leadership are the dimension of visionary and situational, entrepreneur, corporative, developer and integrator. The explanation of every dimension will be discussed as follow:

a) *Visionary and situational dimension 1:* The 21st-century leadership is leadership which has a vision in the future, and leadership can face the challenges and adapt to the skill in the 21st century. Therefore, it can be concluded that the leadership which has to be possessed by the 21st-century leaders is situational leaders. The picture of the visionary and situational leader dimensions is as follows figure 3.

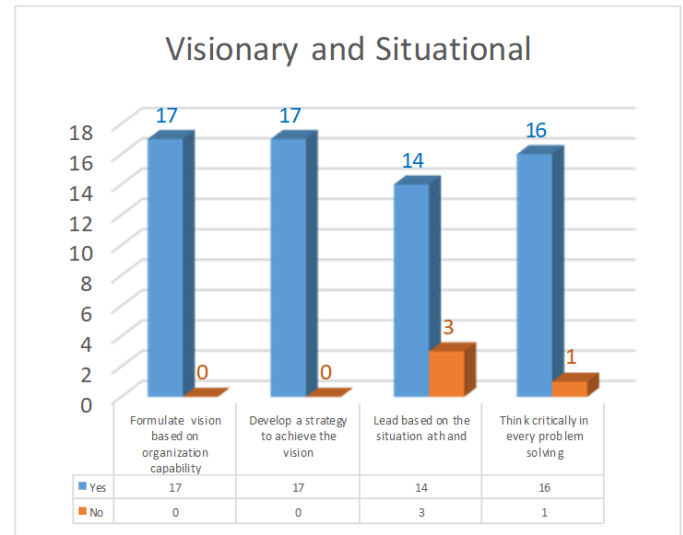


Fig. 3. The dimension of visionary and situational leader.

From this dimension, the researchers give four questions which can illustrate the 21st-century leadership implementation which is the visionary and situational leader. The results are obtained that all respondents answered yes at points 1 and 2. Hence, it can be interpreted that the leaders formulate vision according to organizational capabilities and future-oriented. The leaders develop a strategy to achieve the vision. Therefore, it can be concluded that when the head of the study program as a whole can develop a vision based on UPI's vision and can

strategically develop it. It will support UPI in achieving university's vision comprehensively.

There are three out of 17 study program leaders who answer that they cannot lead the situation at hand. However, 14 out of 17 leaders support the 21st-century leadership achievement or implementation by having leaders who can lead in any situation. In the last indicator, it is illustrated a visionary and situational leadership is that 16 out of 17 leaders can critically think in every problem-solving. It is important in supporting the 21st-century leadership because the era of change is very fast to experience shifting, so the 21st-century leaders have to be always critical thinking in solving various diverse problems.

b) Entrepreneur: The spirit of an entrepreneur for the leaders is vital. The leaders have to be able to always maximize and utilize every aspect had by the institution. The 21st-century leaders are capable of taking opportunities. Hence, the entrepreneur attitude has to be possessed by every leader in this century. The entrepreneurship dimension in its application in the Indonesia University of Education can be illustrated as follows figure 4.

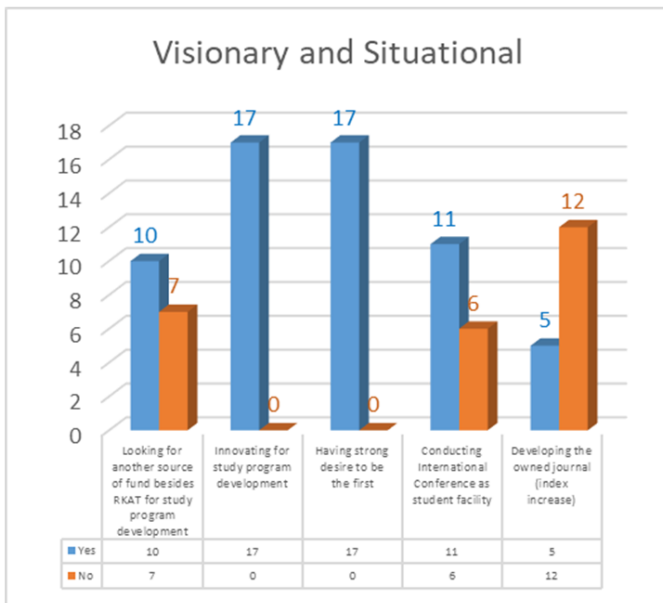


Fig. 4. The trend of leader entrepreneur skill in the Indonesia University of Education.

The Indonesia University of Education is one of the legal state universities in Indonesia in which universities have broad authority on autonomous business development. The five indicators above illustrate how to study program can develop entrepreneurship activities by finding sources of funding other than RKAT for study program developers. 10 out of 17 study program leaders seek business development program. 7 other study programs gain income only from a university resource fund for their study program activity. They do not take advantage of other business which can be developed by the head of a study program.

The second and third indicators are that the study program leaders innovate for study program development and have

strong motivation to be the first due to UPI's vision (a pioneer and superior) which becomes a guideline for all head of pioneer programs to lead their study program. Therefore, it illustrates that the innovation and vision of the study program are in line with between study program and university as a whole and support each other to improve the competitiveness of higher education. It is shown that all 17 respondents implement in study program management.

In the 21st century, conference and publication become prestige in every higher education in terms of higher education existence. Therefore, both indicators become vital in the study program development. However, the development of conference and journal will be maximally implemented if they have a leader with an entrepreneurial spirit. In organizing the international conference by study program, there are twelve study programs which hold an international conference from all sampled respondents. It is correlated with the statement said by the Vice-Rector for Research, Partnership and Entrepreneurship that international conference has increased from year to year. It becomes one of the supporting indicators of university competitiveness. There are five study programs which concern in managing their study program journal. Whereas the 21st-century leader is the leader who can overcome the challenges in the 21st century and journal is one of the challenges becoming a trend in the 21st century. These leaders should be able to implement their entrepreneurial spirit on the improvement of their journal. Therefore, the university will be helped to improve its competitiveness in terms of journal publication.

c) Corporative: The leader can work in a team. He is very dominant but does like to dominate, very directive but still gives freedom to his subordinate, consultative but less participatory. This is the characteristic of 21st-century leadership. The application of the 21st-century leadership dimension in Indonesia University of Education is as follows figure 5.

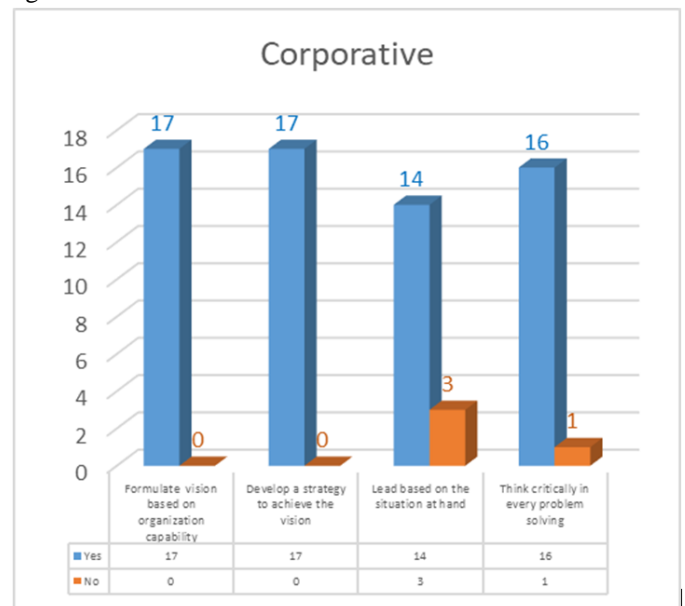


Fig. 5. Corporative leader.

From the shown graph, it can be concluded that the leaders' corporative attitude at the Indonesia University of Education is very high. Four corporative dimension indicators illustrate: 1) the leaders deliberately arrange lecture schedule, 2) all head of study programs provide equal opportunities to every human resource in the study program, 3) able to well communicate all of the things to every human resource in the study program, and 4) establish harmonious relationship among staff of study program in all sampled study programs. It represents that when the leaders have this attitude, there will be a commitment from subordinate to jointly improve the higher education competitiveness. However, this matter has to be started from the leader's attitude.

d) Developer: In this dimension, the leaders are the initiator of study program development by empowering and utilizing his subordinates to always improve. The description of this dimension is as follows figure 6.

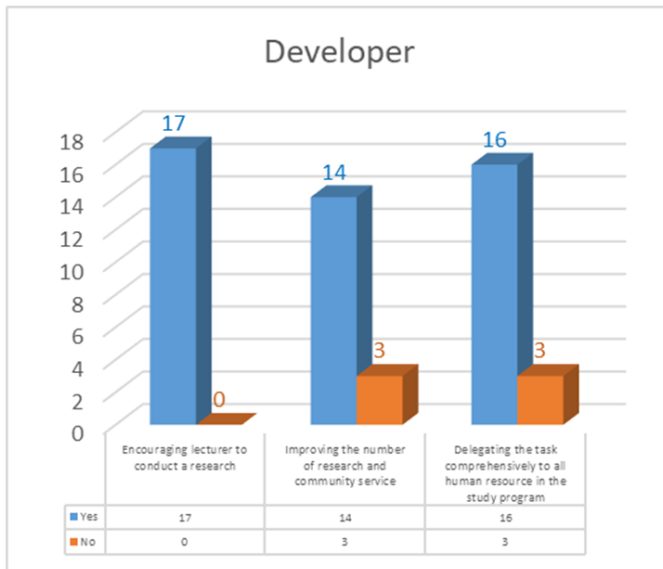


Fig. 6. The implementation of developer in the 21st-century leadership.

All three indicators illustrate that the leaders have developed the attitude shown by the leader who encourages lecturers to conduct research. 100% head of study program answer yes for the question and implement it in their study program while there is three head of study programs who have not increased the number of research and community service activity. It is indicated that the leaders are less active in facilitating the lecturers to conduct research. Besides, the last indicator at 95%, 16 out of 17 respondents have been able to comprehensively delegate the tasks to all human resources in the study program.

e) Integrator: An integrator leader is someone who always wants to build consensus and commitment. In responding to the challenges of 21st-century leadership, the leaders cannot optimally develop higher education by themselves. However, it needs the support of staff and all human resources in the study program.

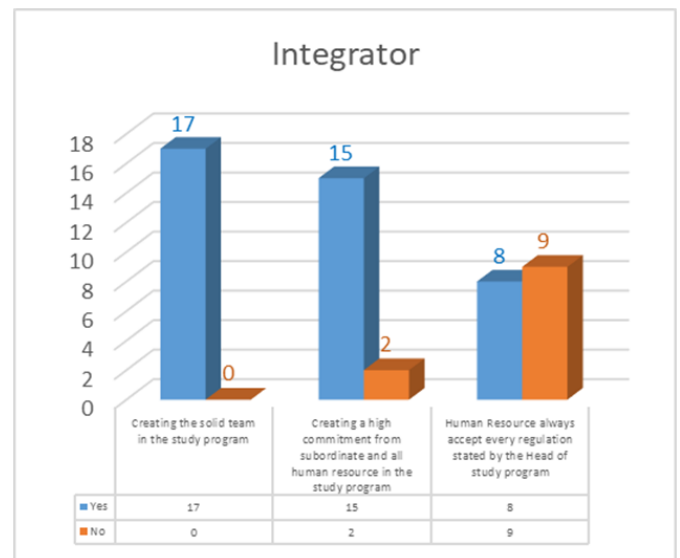


Fig. 7. Integrator attitude in the 21st-century leadership implementation.

In the leadership, the leaders cannot run the organization until they have a solid team in the scope of the study program. In the Indonesia University of Education, all study programs already have a solid team. Meanwhile, high commitment from all subordinate and human resources in the study program is high because there are only two heads of study programs who have very high commitment. This indicator is one of the important things. However, on its implementation, the head of study programs is difficult to make all human resources willing to accept every policy made by the leaders.

B. Discussion

The 21st-century leadership is the leadership supported by digitalization and leads to the millennial and artificial intelligence that no longer use the manual and traditional thing. The opinion above suggests the 21st-century leader are the leaders who have high artificial intelligence. The artificial intelligence is an activity of supplying machine such as a computer with the ability to show behaviour that is considered as intelligent as if those behaviours are shown by humans [11].

The characteristic of the 21st century is digitalization which cannot be avoided. Hence, all the leaders in this era are the leaders who have skill and intelligence known as artificial intelligence (AI). if it is interpreted, the artificial intelligence in its application in the 21st-century leadership is understood when the 21st-century leaders can adapt in the digital and computer era. Some experts also state that digital disruption is a frightening spectre for the organization that is still conventionally managed [12]. To be successful in the era of disruption, the organization has to transform human such as digital leadership, digital culture, and digital way of thinking. Therefore, the digital era is required in the 21st century to become a challenge for the leaders to implement their digital leadership.

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Based on the obtained research result, the 21st-century leadership is the leader who can meet the 21st-century challenge, can survive and adapt to the millennial era with the characteristic of the 21st-century skill which is 4C (communication, collaboration, critical thinking, creativity) and able to overcome the faced problems in accordance with the people's need. This is in line with the experts who argue that 21st-century leadership is the leadership which can overcome the 21st-century challenges and can develop the human skill of the 21st century [13]. The skill of communication, collaboration, critical thinking, creativity in the 21st century is considered essential for the achievement in current society and are best taught in the context of main subject areas [14].

This 21st century is different from the previous century in which the university has to adjust and adapt to the shifting in its era, and in this century, digitalization is required in the university activity. For instance, in learning process needs online and IT facility because currently, the learning process has begun to cross country and cross border known as blended learning which requires on a mobile phone or mobile learning in its learning process [15]. Simply, Blended learning means a learning pattern containing mixed elements or merging between one learning pattern with another learning pattern. Blended learning is one of the educational issues in the development of globalization and technology [16].

Based on the study result, it is also stated that the 21st-century leadership have to be able to awaken and inspire all people that they lead to adapt and continually improve their ability to face the demands and changes in their environment. Besides, helping a member becomes familiar with the ability to create ideas, helping members to communicate their ideas effectively, collaborate with others and think critically on the ideas which can help the student to meet the 21st-century challenges [17].

Based on the research result supported by theory or literature study, the writers conclude that the 21st-century leadership is a leadership which can adapt with every challenge

in the 21st century and can develop the skill on his era. The 21st-century leadership can be implemented through visionary and situational leadership and artificial intelligence development. The skill which has to be had by the 21st-century leaders are skills of Communication, Collaboration, Critical Thinking, Creativity, Corporative, Integrator, Developer, Entrepreneur or researchers abbreviate to 5C IDE.

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