

THE EFFECT OF ACADEMIC CULTURE AND COLLABORATIVE CULTURE AS COLLABORATIVE ACADEMIC CULTURE TO IMPROVE THE INNOVATIVE BEHAVIOR IN UNIVERSITIES

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Abstract: Leaders in various universities design and participate in education by constructing and developing fresh and new ideas and innovations to create efficient teaching methods across all departments. Additionally, millennials are the technology-literate generation, making this an exciting time for them as they try to meet market demand. This fact will serve as the foundation for determining whether the university's collaborative and academic culture impacts the lecturers' innovative behavior. The 101 samples of lecturers were taken from 5 universities in the Jakarta and Java area. The Structural Equation Model (SEM) of Smart PLS was used in this analysis. The results indicated whether Collaborative Culture and Academic Culture affect Innovative Behavior. From the results of this analysis, it is essential to develop and improve future methods of combining collaborative and academic culture to create a Collaborative Academic Culture. This method would in turn improve innovation in the university, as the country had set a goal to increase the collaboration between higher education stakeholders in society. It is also expected that the derivation of the two variables will further develop the effectiveness of quality teaching in higher education.

Keywords: collaborative culture, academic culture, innovative behavior

Abstrak: Banyak Perguruan Tinggi dimana para pimpinan organisasi tersebut ikut merancang dan berkiprah di bidang pendidikan dengan menciptakan dan mengembangkan ide dan inovasi yang segar dan baru untuk dapat menciptakan metode pengajaran yang efisien di seluruh jurusan. Selain itu, generasi milenial adalah generasi yang melek teknologi, menjadikan ini sangat menarik bagi mereka untuk mencoba memenuhi permintaan pasar. Fakta ini akan menjadi dasar untuk menentukan apakah budaya kolaboratif dan budaya akademik universitas berdampak pada perilaku inovatif dosen. Survei tersebut ditanggapi 101 orang dengan sampel dosen di 5 perguruan tinggi di wilayah Jakarta dan Jawa. Structural Equation Model (SEM) Smart PLS digunakan dalam analisis ini. Hasil penelitian menunjukkan apakah Budaya Kolaborasi, Budaya Akademik berpengaruh terhadap Perilaku Inovatif. Dari hasil analisis ini untuk meningkatkan dan mengembangkan metode masa depan kombinasi budaya kolaboratif dan budaya akademik menjadi Budaya Akademik Kolaboratif untuk meningkatkan inovasi di universitas. Seperti yang diharapkan oleh negara, kolaborasi antara pemangku kepentingan pendidikan tinggi di masyarakat. Selain itu diharapkan penurunan kedua variabel tersebut akan semakin mengembangkan efektivitas pengajaran yang berkualitas di perguruan tinggi

Kata kunci: collaborative culture, academic culture, innovative behavior

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INTRODUCTION

As we are all aware, technological advancements have become incredibly global in the current era of development and the millennial era, and the spread of information can no longer be curtailed. Technology advancements are helping new learning paradigms like constructivism, student-centered learning, just-in-time learning, and collaborative approaches take hold (Ifenthaler et al. 2012). The important and main purpose of this research is that this will support universities' efforts to raise productivity levels and align with the goals of Indonesian educational system. When viewed in its current development, it can be defined as a series of progressive changes that occur as a result of the maturation and experience process, and consists of a series of changes that are both qualitative and quantitative, as recommended in this study (McKone et al. 2012). We have entered a new period called Industrial Revolution 4.0, in which information and communication technology will overtake all other factors in determining how people live their lives (Morrar et al. 2017) the fourth industrial revolution (Industry 4.0. Given that many Indonesian universities have created some majors in the field to meet market demand, which is millennial generation is technologically savvy (Alonderiene and Majauskaite, 2016). The government is highly supportive of these technical developments and hopes that educational institutions will always be ready to generate qualified graduates and develop innovative ideas to compete. For everyone, both now and in the nation's future, this is crucial and essential (Kanematsu and Barry, 2016).

As humans advance, they will need to work together more frequently to increase innovation through an academic and collaborative culture, allowing universities to introduce fresh innovations in the field of education (Boulton and Lucas, 2011). To encourage collective teacher innovation, the article highlights how crucial it is to give teachers more control over their classrooms and to foster a collaborative university culture (Nguyen, Pietsch and Gümüs, 2021). As a result, the government asks for help and support so that educators can contribute to raising the standard of education in our nation, Indonesia, and ultimately raising levels of consistent and encouraging research and innovation in an increasingly cutthroat global environment, particularly in the revolutionary era Industry 4.0 As a result, one of the difficulties facing educators is raising the standard of instruction (Bjork, 2003).

To support long-term growth and constructive change in schools and elsewhere, education innovation is required (Serdyukov, 2017). For innovations used in schools to be implemented successfully, teachers' innovative behaviors are essential (Vermeulen and Thurlings, 2014). Innovative conduct is a self-directed process of conceiving, advocating, and executing change (Hoekstra, Kuntz and Newton, 2018). An integral part of innovative teacher behavior and a requirement for innovation and change is the ability to innovate as a teacher, which is characterized by openness, receptivity, and willingness to accept change (Kern, Richards and Housner, 2020). Researchers have looked at the use of particular innovations and reforms as well as the originality of particular teachers (Nguyen, Pietsch and Gümüs, 2021) and (Güzin and Akar, 2019), 2019). This body of literature has conceptualized and documented significant issues related to teacher change. It is argued that more studies on classroom group creativity would be beneficial to the field (Buske, 2018); (Moolenaar et al. 2014). Since innovation in schools must be implemented, maintained, and spread to be effective, the first justification for this article is very compelling (Schechter and Tschannen-Moran, 2006).

This study is aimed at privately managed educational organizations, including several universities. In times of global competition, the government always prioritizes Human Resources who are capable of competing and have qualified education in a variety of fields, particularly in innovative behavior. As a result, the government is currently promoting a program called superior human resources, which will be implemented in 2045, when Indonesia will celebrate 100 years of independence, and for which the government already has a 2045 Vision (C Holmemo, P Acosta, T George, 2020).

At Indonesian universities, innovative behavior is considered enhanced by collaborative and academic culture. The effectiveness of a collaborative culture as a platform for advancement within an organization has been demonstrated to have a significant impact on efforts to reform schools. Three fundamental human needs, i.e., a sense of control, a sense of purpose in one's circumstances, and supportive relationships and can be met in an organization through a collaborative culture (Edmonson *et al.* 2001). Teaching is becoming more collaborative thanks to an effort to establish a school-university partnership for professional development (Cozza, 2010).

In this instance, it has not been found to be efficient in carrying out lecturers' teaching responsibilities, and if it has been accomplished and generates higher-quality work, which is ultimately for the advancement of the organization and the production of trustworthy graduates. The study of how human resources management (HRM) can be carried out in a superior, creative, and innovative manner, so that management objectives can be met and the activities are effective. Excellent at managing human resources, activating activities, and coming up with new ideas (Sabrina, 2021). The challenges that Indonesian universities, particularly private universities in Indonesia, will face in the face of global competition are the readiness and the ability of educational institutions to position themselves, whether they are able to align with education organizers or other leading universities (Marginson and Sawir, 2016). The state of the art of their research is to see how to increase innovation in terms of learning. So therefore that the emphasis is on lecturers to be able to increase their innovation with higher capacity, through hard skills, soft skills, and behavior, by combining a collaborative culture and academic culture so that the universities where they work are able to compete in the field of education. Numerous studies suggest that the implementation of an effective and comprehensive educational program is influenced by lecturers' creative behavior that is supported by organizational leaders. Administrators' Support for Innovation as Perceived by Faculty in Relation to Leaders and Teaching Environments in order to determine how faculty felt about senior leaders' (such as deans, provosts, and presidents) support Faculty Survey of Student Engagement for Teaching Innovation was performed in 2012 (Cole, Dumford, and Laird, 2017).

The goals of this study are as follows determine whether collaboration culture influences innovative behavior; Investigating whether academic culture influences innovative behavior; Investigate whether collaboration culture and academic culture have an impact on innovative behavior.

METHODS

Five universities in Jakarta and Java areas participated in this research, which focused on lecturers, particularly those in the economics and business management faculties. The focus of this study is on collaborative and academic culture and how it affects creative behavior.

The population of this study consisted of lecturers who had graduated with a master's degree (Strata 2) from five universities. The Slovin formula was used to calculate the number of samples with a 95% level of confidence. There are 101 professors in the Faculty of Economics. The sampling method used was a survey of the lecturers. This study requires primary data from respondents. Likert scales are used to gauge participants' attitudes, opinions, and perceptions of social phenomena as the "Questionnaire Method" is the primary data collection strategy (Sugiyono, 2008). Each closed-ended question or statement item has five possible answers: strongly agree (SA), agree (A), disagree (DA), and strongly disagree (SDA), with a score range of 1 to 5. Table 1 describes the ages and the last formal educations of the respondent from the total of 101 respondents.

Table-1. Sample descriptive information

| | Criteria | Amount | Percent |
|-----------------------|-----------------|--------|---------|
| Age as per 2021 | 40-45 Years old | 23 | 23% |
| | 46-49 Years old | 35 | 35% |
| | 50-55 Years old | 20 | 20% |
| | 56-60 Years old | 23 | 23% |
| | Total | 101 | 100% |
| Last formal Education | S2 | 86 | 85% |
| | S3 | 15 | 15% |
| | Total | 101 | 100% |

The Smart PLS 3.0 tool and structural equation modeling (SEM) were used to analyze the data. PLS SEM can be used to analyze the effects of latent variables and their indicators (Ghozali, 2012). To evaluate the construct validity and reliability of the indicators used in this study, confirmatory factor analysis will be used (CFA) The construct has good reliability, according to Hair et al. (2010), if the variance extracted value is 0.50 and the construct reliability (CR) value is 0.70.

As a follow-up step to the problems posed in the research, the formulation of hypotheses and constructions, and based on the study of the theoretical and theoretical foundations that have been presented. To facilitate researchers in analyzing and discussing research results, it is necessary to have operational definitions of the variables that have been determined. A theoretical model is a representation of a structural relationship, usually based on a set of equations connecting the variables that formalize the theory and visually represent the relationships of the variables in question. Variables as elements of the theoretical model, represent broad ideas or thoughts about abstract

concepts defined and proposed by researchers to be measured in research (Sarstedt, Ringle and Hair, 2020). Construct measurement requires the translation of conceptual definitions into operational definitions. The operational definition of a construct connects a conceptual or theoretical definition with more concrete indicators (Kimberlin and Winterstein, 2008). The operational definitions of each of these variables (Table 2) are as follows:

Operational definitions of Collaborative culture

Collaborative culture is an ever-evolving process that requires continuous maintenance in order to thrive, so as to ensure the strategic plan runs smoothly and turn the College into a learning organization with various types of collaboration to prepare students for a better future (Glowacki-Dudka and Murray, 2015). The indicators are Discuss with others, open discussion, collaborate in planning, sharing teaching experience, learning together, visiting another classroom, knowledge sharing, work on new idea (Reeves, Pun and Chung, 2017).

Table 2: Calculation of outer model

| Code | Variable Indicators | (λ) | AVE | Composite Reliability | Cronbach's-Alpha |
|-----------------------------------|---|-------|-------|-----------------------|------------------|
| Collaborative Culture (CC) | | | 0.505 | 0.833 | 0.762 |
| CC1 | Lecturers often study more effective learning methods | 0.590 | | | |
| CC2 | Lecturers are happy to discuss other parties' research findings | 0.595 | | | |
| CC3 | Lecturers are happy to come up with scientific innovation ideas | 0.842 | | | |
| CC4 | Lecturers often experiment to get new scientific ideas | 0.813 | | | |
| CC5 | Lecturers are happy to discuss learning media that can encourage increased learning achievement | 0.674 | | | |
| Academic Culture (AC) | | | 0.588 | 0.875 | 0.819 |
| AC1 | Lecturers have broad autonomy in developing their respective disciplines | 0.889 | | | |
| AC2 | Each of the lecturers highly respects the scientific specialization of the lecturer | 0.762 | | | |
| AC3 | The lecturers are enthusiastic to compete in developing their scientific disciplines | 0.600 | | | |
| AC4 | There is high motivation from lecturers in conducting research | 0.749 | | | |
| AC5 | Lecturer's research results are presented in an open seminar | 0.806 | | | |
| Innovative Behavior (IB) | | | 0.601 | 0.882 | 0.842 |
| IB1 | I read more books and journals to get new ideas | 0.895 | | | |
| IB2 | I read relevant research results to broaden the inspiration of new ideas as a lecturer | 0.690 | | | |
| IB3 | I immediately invite colleagues to discuss when there is a problem on campus | 0.770 | | | |
| IB4 | I did a comparative study to find inspiration for developing new ideas as a lecturer | 0.755 | | | |
| IB5 | I offer to colleagues who will ask for help in solving a problem | 0.751 | | | |

Operational definitions of Academic culture

Academic culture on campus is actually the external manifestation of the common values, spirit, behaviour norms of people on campus who are pursuing and developing their study and research. This kind of culture can be embodied in the rules and regulation, behavior patterns and the material facilities. It mainly consists of academic outlooks, academic spirit, academic ethics, and academic environments (Shen and Tian, 2012). The indicators are putting ideas, discussing thoughts and debating new ideas (Segara, 2018).

Operational definitions of Innovative behavior

A teacher's or lecturer's perspective that shows that when they are trusted (or feel) empowered, they are better prepared and more likely to volunteer to generate creative ideas to improve the work environment, skills, knowledge, and well-being of the organization in order to compete in the world of education (Scott and Bruce, 2011); (Yuan and Woodman, 2010); (Xerri and

Brunetto, 2013); (Abukhait, Melhem and Zeppane, 2018). The indicators are opportunity exploration, generativity, informative investigation, championing, application (Kleysen and Street, 2001).

Research Hypothesis

How academics collaborative and academic culture is seen to contribute to the innovative behavior in higher education? By examining the information above, the researcher highlights the hypotheses outlined, and it is anticipated that conclusions on the condition that the hypotheses can be reached to address the research issue and to refer to the theoretical study and earlier research as mentioned above, the research model is depicted in Figure 1. The research hypothesis is as follows:

- H1: Collaborative Culture has a positive effect on Innovative Behavior
- H2: Academic Culture has a positive effect on Innovative Behavior
- H3: Collaborative Culture has a positive effect on Academic Culture

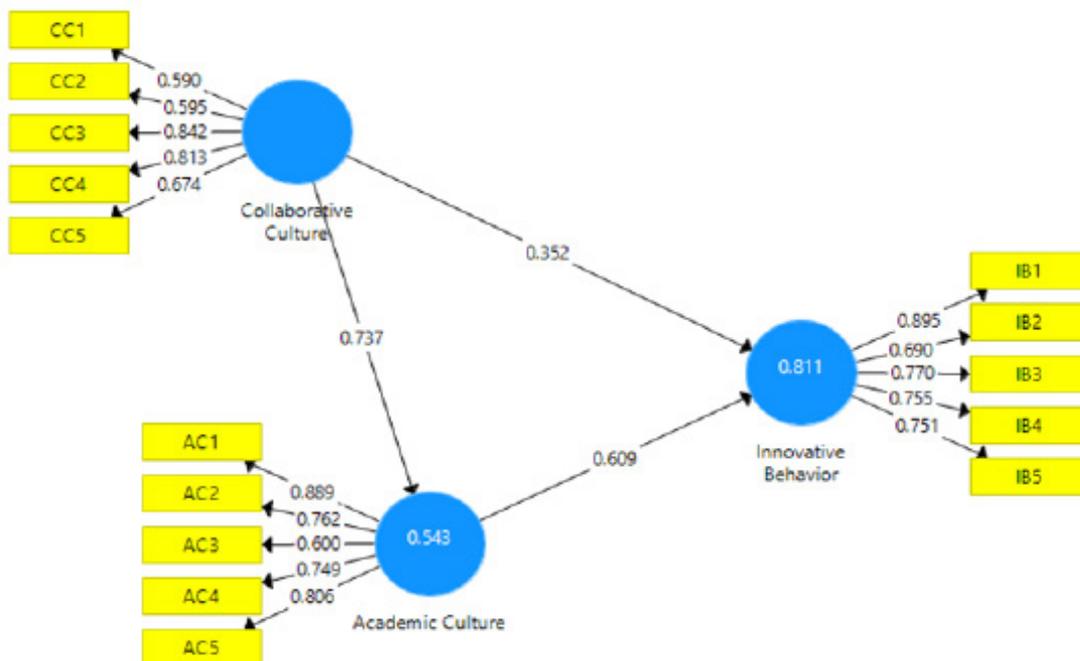


Figure 2. Research model valid

RESULTS

Test Results of the Validity and Reliability of Research Indicators

The measurement model testing phase also includes testing for composite reliability, discriminant validity, and convergent validity. If all indicators in the PLS model have met the criteria for convergent validity, discriminant validity, and reliability testing, the findings of the PLS analysis can be utilized to assess the research hypothesis.

Test Result of the Convergent Validity

The loading factor value of each indicator on the construct is used to conduct the convergent validity test. The majority of references believe that a factor weight of 0.5 or above has sufficient validation strength to account for latent constructs. (Chin, 1998; Hair et al. 2010; Ghozali, 2014). If the AVE value of each construct in this study is greater than 0.5, the accepted loading factor has a minimum limit of 0.5 (Ghozali, 2014).

The PLS model estimation results shown show loading factor values for each indicator that are all more than 0.5, indicating that the model meets the requirements for convergent validity. The AVE value for each construct and the loading factor value for each indicator were used to assess convergent validity. The AVE for each component in this investigation is higher than 0.5. As a result, this research model's convergent validity satisfies the criteria. The loadings, Cronbach's

alpha, composite reliability, and AVE values for each full construct are displayed in Table 3.

Construction Reliability Testing

The Cronbach's alpha value and the composite reliability of each construct can be used to evaluate construct reliability. Cronbach's alpha and composite reliability should be within a range of larger than 0.7 in 2014. (Ghozali). All constructs have composite reliability, as shown by the reliability test results in Table 3, and Cronbach's alpha values are greater than 0.7 (> 0.7). In summary, all constructs have attained the necessary reliability.

Desriminant Validity Testing

Discriminant validity is used to ensure that each concept of each latent variable is unique from other latent variables. The model has acceptable discriminant validity if the AVE square value of each exogenous construct (the value on the diagonal) is larger than the correlation between this construct and other constructs (values below the diagonal) (Ghozali, 2014). The outcomes of the discriminant validity testing utilizing the AVE square value can be seen by looking at the Fornell-Larcker Criterion Value.

Table 4's results of the discriminant validity test demonstrate that all constructs have square root values of AVE that are higher than the correlation values with other latent constructs, in accordance with the Fornell-Larcker criteria, demonstrating that the model has attained discriminant validity.

Table 3. Construct reliability and validity

| | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|-------|------------------|-------|-----------------------|----------------------------------|
| X1-CC | 0.762 | 0.786 | 0.833 | 0.505 |
| X2-AC | 0.819 | 0.832 | 0.875 | 0.588 |
| Y-IB | 0.832 | 0.842 | 0.882 | 0.601 |

Table 4. Discriminant validity

| | X1-CC | X2-AC | Y-IB |
|-------|-------|-------|-------|
| X1-CC | 0.767 | | |
| X2-AC | 0.737 | 0.711 | |
| Y-IB | 0.801 | 0.868 | 0.775 |

Hypothesis testing

The PLS hypothesis test is also known as the inner model test. This test performs significant checks direct and indirect effects as well as assessing the strength of the influence of exogenous variables on endogenous variables. To ascertain the influence of strategic leadership on competitive strategy and business performance, a direct and indirect effects test is required. The partial least squares (PLS) analytical model's t-statistic test and SmartPLS 3.0 software were used to conduct the effect test. The R Square value and significance test value are obtained using the bootstrapping approach, as indicated in the table below.

According to Table 5, the R Square value for Academic culture is 0.543, which means that collaborative culture and innovative behavior can account for 54.3 percent of the variance in academic culture. Other variables outside the scope of this study can explain the remaining 45.7 percent of the variance. According to the competitive strategy's R Square value of 0.804, the collaborative culture variable can explain the innovative behavior variable by 80,4%, with the remaining 19.6% being accounted for by factors outside the scope of this study. Table 6 displays the T Statistics and P-Values that demonstrate the interaction between the previously mentioned research variables.

Table 5. R-Square

| | R Square | R Square Adjusted |
|---------------------|----------|-------------------|
| Academic Culture | 0.543 | 0.538 |
| Innovative Behavior | 0.811 | 0.807 |

Table 6. Hypotheses Testing

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (O/STDEV) | P Values | Decision |
|--|---------------------|-----------------|----------------------------|--------------------------|----------|----------|
| H1-Collaborative Culture → Innovative Behavior | 0.352 | 0.358 | 0.080 | 4.396 | 0.000 | Accepted |
| H2-Academic Culture → Innovative Behavior | 0.609 | 0.604 | 0.076 | 8.032 | 0.000 | Accepted |
| H3-Collaborative Culture → Academic Culture | 0.737 | 0.735 | 0.054 | 13.746 | 0.000 | Accepted |
| Indirect Effect | | | | | | |
| Collaborative Culture → Academic Culture → Innovative Behavior | 0.449 | 0.444 | 0.068 | 6.643 | 0.000 | |

The relationship between collaborative culture and innovative behavior

Based on the analysis's findings in Table 6, it can be said that H1 is accepted because the T Statistics are 4.396 > 1.96 and the P-Value is 0.0. Innovative behavior is significantly influenced by collaborative culture. An increase in innovative behavior will occur after an increase in collaborative culture variables. The results of this study support those results finding that to improve technological or innovative capacities, networks of collaboration between academia, governments, and consumers must be encouraged (Cai and Li, 2018).

The relationship between academic culture and innovative behavior

Table 6's analysis yielded T Statistics of 8.032 > 1.96 and a P-Value of 0.000, allowing us to draw the conclusion that H2 is accepted. Innovative behavior is significantly influenced by academic culture. An increase in innovative behavior will occur after an increase in academic culture variables. The results of this study support those results, which found that Innovative behavior can be encouraged by organizational elements such as academic culture, organizational climate, leadership, communication among all stakeholders, and managing feedback internally (Thurlings, Ever and Vermeulen, 2015).

The relationship between collaborative culture and academic culture

T Statistics is $13.746 > 1.96$ and P-Value is 0.0, which indicates that H3 is accepted based on the analysis in Table 6. Collaborative culture has a big impact on academic culture. A rise in the collaborative culture variable will cause academic culture to increase. The results of this study support those results, that in a number of instances, it was determined that closer working ties between academics, executive, and professional employees participating in quality management systems and surveys were crucial for efficient analysis and reporting of learning and teaching quality (Jones et al. 2012). In Table 6 analyse the specific indirect effect of Collaborative Culture on Innovative Behavior through Academic Culture is accepted as the T Statistic is $6.643 > 1.96$.

Managerial Implications

The analysis of the data yielded the following conclusions: Academic culture significantly influences innovative behavior, collaborative culture significantly influences innovative behavior, and academic culture significantly influences collaborative culture. In facing the current intense competition University ranking organized by QS-WUR (World University Ranking), the university has to increase the innovative behavior immediately. This will be a good strategy in advance as Indonesian University ranks still below of Singaporean University. Because they are extremely knowledgeable about their own fields, faculty members or universities, for instance, could rank programs in their fields or subfields and urge that innovative behavior by the lecturer be immediately put into practice. Academic and collaborative developments in theory and practice that will be put into practice in universities have an impact on the educational sector.

Thus the research has implications for active collaboration to enhance innovative behavior in higher education by the lectures. They will consider ways to improve collaboration and are urged to establish an academic collaborative culture. Applying the effectiveness and utility of the definitions offered will enhance and foster collaboration in academic settings and throughout society. University empowerment in the community will be better for future studies in terms of values and later will find better dimensions to underline the significance of this academic collaborative culture variable.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The Academic collaboration culture is a type of interaction and collaboration that comprises a number of related elements. It involves managing the main opportunities and challenges in collaboration between organizations to develop educational programs, which results in the identification of effective strategies for utilizing opportunities and addressing these challenges by using universities as platforms for social experimentation through research. The fusion of these two theories and fields is accelerating quickly and has a variety of effects on stakeholder engagement as well as academic and professional practice collaboration. Technology advancements like simulation, in-field collaborations through virtual and multiagent systems, constructivism, student-centered learning, and collaborative approaches have emerged and are supporting paradigms like these. These changes have produced both possibilities and areas that the government is seriously concerned about. In addition, the university will also try to improve this collaboration method and academic culture by using a new method called the academic collaborative culture method. By creating this new method, universities and stakeholders in society can collaborate closely and in this way will improve the quality of education, along with the increase in the world of education. So therefore that the innovative behavior can be increased to help the community to adjust the university's performance in line with the main performance of the Indonesian education world.

Recommendations

There are restrictions on this study, as there are with any university-based research projects. The primary issue that needs to be taken into consideration is that each university has a unique academic culture that can only be evaluated by the institution itself, specifically by comparing the set plans to the actual progress made. Since people who lack specific skills frequently lack this awareness in their reporting, using measures that are externally or objectively examined may reinforce the evidence. In order to evaluate culture and academic collaboration and employ them more, there should be objective evaluations. It will be intriguing to observe whether these novel types of factors yield comparable outcomes in upcoming research. Another drawback

is that, although we focus on one behavioral aspect of creative collaboration the sharing of novel ideas possible it's that there are other behavioral processes that are equally as significant. Therefore, examining the inventive behavior of people with high versus low cultural metacognition throughout the creative collaboration process represents another area for future research.

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