Discord-Based COMPILE Application Model in Improving the Effectiveness of Teachers and Education Staff Management

Laurentia Prabaniardi Kartikasari*, Ade Iriani, Sophia Tri Satyawati
Master of Education Administration, Universitas Kristen Satya Wacana
*Corresponding Author. Email: laurentia.prabani@gmail.com

Abstract: This study aims to develop a Discord-based COMPILE application model to improve the effectiveness of teachers and education staff management. This research is a Borg & Gall Research and Development (R&D) model with sequential explanatory mixed methods (qualitative and quantitative). Product development on the model uses the ADDIE development model, namely: Analysis, Design, Development, Implementation, and Evaluation. Developmental research was conducted at Tunas Bangsa Elementary School, Kuburaya, West Kalimantan. The research subjects were school directors, principals, teachers, and education staff. Research results were validated using technique triangulation and source triangulation methods. Qualitative data analysis used the Miles & Huberman model, while quantitative data analysis used the Likert scale. The results of the IT expert validation assessment showed a score percentage of 93%, the management expert validation result was 84%, and the results of the field trial with users (management, teachers, staff) showed a score of 82%. Thus, respectively showed the results of each validation and trial in a row as "Very Good", "Good" and "Good". So, the product, a Discord-based COMPILE application model, is feasible, acceptable, and can be used to improve the effectiveness of the school's management of teachers and education staff resources.

Introduction

The world of education is a strategic field to shape better and quality Indonesian people in the future by targeting the formation of the character of students who are reliable, disciplined, and competitive in various fields in the future. It is in line with (Subiarto & Wakhudin, 2021), who say that education is essential to life. One of the efforts that can be shown in forming the character of quality human resources is the discipline of teachers and education staff toward school rules and regulations.

Education workers are part of the educational staff, namely members of the community who dedicate themselves and are appointed to support the implementation of education who have a mental attitude of willingness to comply with all provisions, regulations, and norms that apply in carrying out their duties and responsibilities (Irawati, 2017). The performance of teachers and education staff in schools through the teacher and education staff performance assessment instrument (PKG) can help to improve the discipline of teachers and education staff who play an important role in the achievement of the goals to be achieved by a school (Setyowati, 2019). Thus, ongoing commitment is needed to improve the competence of human resources in the professionalism and work discipline of teachers and education staff in schools. The mechanism for managing teaching and educational staff resources in schools is part of HR management in education with general management

principles and the components in the management principles of teachers and educational staff resources. Fundamental human resource development includes two main things. First, to develop potential from a humanitarian perspective or humanity (efforts to use and mastery of technology). Second, attitudes can have a moral impact to avoid a humanism crisis (Wijaya et al., 2019). The desire to form human resources with high integrity is also a challenge for an academic unit. It is because each individual has a different understanding, character, and thoughts which sometimes becomes an obstacle in adjusting to organizational culture and ideals. It cannot be denied that the success of a school organization depends on the performance of its human resources (Estiwinengku, 2019; Hindriari, 2018; Siregar & Lubis, 2017). In general, the scope components in the management of teachers and educational staff includes six things, namely assessing the needs of teachers and educational staff, procurement/recruitment of qualified teachers and educational staff, fostering and developing professionalism and competence of teachers and education staff, promotions and transfers teachers and educational staff position, compensation and awards (reward & punishment), termination of teachers and educational staff (Putra et al., 2023; Maghfiroh, 2020; Siregar & Lubis, 2017).

It is said that an obedient and disciplined attitude will be able to apply the rules and policies set by the school with full awareness and responsibility because teachers and education staff are one of the keys to the success of the learning process (Hasibuan & Harahap, 2022). One is related to teachers and education staff attendance in schools. In contrast, in private schools, this aspect is usually becoming the concern of the school principal and the foundation. This information is very much needed by the school management for decision-making in managerial and academic supervision as well as by foundation administrative staff for the benefit of foundation managerial supervision who also have an interest in knowing that there are accurate attendance records of teachers and education staff, related to reward and punishment (Wulandari, 2020). Teachers' discipline can be easily seen from the level of attendance and timeliness of attendance at school and is part of the culture formed in the school organization. For administrators of education, discipline is a concern that is always maintained to build a good school image (Efendi, 2021). The scope of the management of teachers and education staff also mentions the coaching and development of teachers and education staff related to increasing the competence and professionalism of teachers and education staff. So it is the responsibility of the leaders as part of the school management to think about and provide the necessary facilities to fulfill these components. Effective educational leadership can make the standards of teachers and educational staff that support efforts to improve the quality of education real (Siregar & Lubis, 2017). Completing a work activity properly in terms of cost, time, and quality is a parameter of an action that is said to be effective (Yulianto & Nugraheni, 2021). Also, it is said that effectiveness is a concept of action that positively influences the organization in achieving its goals (Yulianto & Nugraheni, 2021; Lenz et al., 2018).

Regarding efforts to manage human resources, SD Tunas Bangsa Kubu Raya in West Kalimantan tries to apply the same perspective regarding human resources, where it is believed that quality human resources can improve performance and achieve the educational goals set. The human resources are teachers and educational staff within the organizational scope of SD Tunas Bangsa. Limited information and low levels of participation of teachers and education personnel in professional and competency development activities, low awareness of attendance punctuality on working days, the ineffective process of applying for attendance permits, and the absence of an organized and integrated management information system media have the potential to cause obstacles in the management of teachers and

education staff management at Tunas Bangsa Elementary School. These cause an impact on the level of discipline of existing teachers and education staff of the school. Based on these, the researcher deems it necessary to research the problems that arise in managing human resources at Tunas Bangsa Elementary School, which is also part of the school's managerial supervision for the smooth running of academic supervision. In the future, the results of this research can provide helpful input for improving the quality and existence of Tunas Bangsa Schools in managing its resources in competing with other private schools around its area.

Discord application makes effective and efficient interaction and communication between users possible, even in online learning. Besides, discord also has more advantages compared to other applications such as Moodle, Lotus, and Whatsapp; apart from the fact that notifications directly pop up on the smartphone, this application also does not cause a heavy load on the system and offers ease of operation (Dayana et al., 2020; Kruglyk et al., 2020). The product development is a Discord-based application which is referred to as COMPILE, which consists explicitly of (1) Model development of a discord-base application named COMPILE and (2) Discord-based COMPILE Application itself to improve the effective management of teachers and education staff.

The term COMPILE refers to the three main categories from the scope of the management of teachers and education personnel determined beforehand to be put on the developed application. Description of the term taken from (1) COM for Competence, where the users can upload any certificate of participation in seminars or workshops that support the improvement of their professional competence, share the knowledge and key takeaway (s) online in the school community to improve learning and teaching or for the school improvement; (2) PI for Punctuality, a category to inform the punctuality during workdays to raise the awareness and sense of personal discipline; (3) LE for Leave Permit, a category that eases the leave permit proposal and approval procedure, for the effective bureaucracy, process, and document archive. This research also aims to build a Discord-based application as a management information system which is expected to be a tool that provides convenience and effectiveness in educational HR management that can be directly accessed online so that it can be identified and responded to real-time by the management of school and foundation along with related staff as well.

Research Method
This research used a Borg & Gall research and development model presented with a sequential-explanatory mixed-method. Data collection techniques were carried out by triangulation from observation, questionnaire, and interview (combined) that involved the school director, school principal, curriculum coordinators, teachers, and staff, and so for the limited field trial. Product development for the model uses the ADDIE development model, namely: (1) analysis; (2) Design; (3) Development; (4) Implementation; and (5) Evaluation. Validation of research results was done using data triangulation and source triangulation methods. Qualitative data analysis used the Miles & Huberman model: data reduction, data display, and conclusion drawing or verification (Miles & Huberman, 2014). Then, quantitative data analysis was carried out using the Likert scale to determine the objective criteria classification for the validation assessments (Sugiyono, 2018). Data validation was done by an IT and a management expert.

Results and Discussion
The result of this research is the development of a Discord-based COMPILE Application Development model for improving the effectiveness of teachers and education

staff management, equipped with a user guide for the Discord-based COMPILE application for directors (foundations), principal, teachers, and education staff, as well as administrative staff. This application development model is intended for school administrators in implementing human resource management in educational units managed by Tunas Bangsa Elementary School, Kuburaya, West Kalimantan.

This product was developed based on the scope or components of teachers and education staff resource management that can be managed through the Discord-based COMPILE application media. So far, the issues in the school management system were the unintegrated and unorganized management information system, resulting in obstacles in receiving information quickly, accurately, and on time-related to personnel information management. When the documentation is not well organized and not easy to be tracked and traced when needed, it will cause ineffective performance in teachers and education staff management activity. Based on this, the researcher planned a model for an application that can be used as a tool to improve the effectiveness of teachers and education staff resource management at SD Tunas Bangsa Kuburaya, so that the school management becomes more optimal and effective.

The following is an explanation of the COMPILE application model developed by researchers using the ADDIE approach method: (1) Analysis, where this stage is when it is necessary to identify the problems that arise. In order to obtain information on why it is necessary to develop a product; (2) Design, where there is a process that is arranged systematically, starting with designing the concepts and contents needed to be applied in the product so the product performance is obtained according to expectations, at this stage, it is needed as a basis and guideline for the next stage; (3) Development, the stage of production where the product has been designed at the design stage with the completeness of all its supporting components; (4) Implementation (dissemination), is the stage where the product that has been made begins to be socialized and used by users to test its performance so that a response is obtained as feedback on the product; (5) Evaluation (improvement), is the stage where an assessment of product quality and performance is carried out (Satriawan, 2023; Rayanto & Sugianti, 2020). The following chart in Figure 1 shows the ADDIE method framework to develop the product.
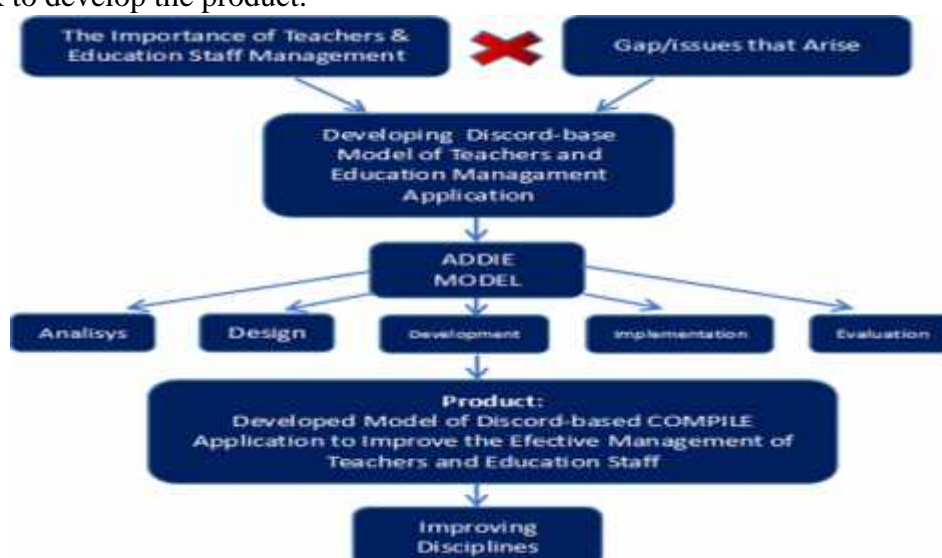

Figure 1. Discord-Based COMPILE Application Framework

When the COMPILE application design was completed, the researcher compiled a model book and manual guidebook separately. The model book is about to explain the reason

behind and, step by step, the development of the model. While the manual book was made based on stages in the application, starting from creating an account, finding suitable bot sources and command codes, setting roles, and guidance on how to operate the application for users (school directors, school principal, teachers, and education staff). The next was to test the feasibility of the application as the product by an expert validator, in this case, is by IT experts. Each aspect was made into a statement in a document uploaded and filled in using the online Sign-now application. Then the results were analyzed and assessed by using a Likert scale. The assessment of validation results by IT experts is presented in Table 1.

Table 1. IT Expert Validation Results

No	Validation	Average	Result (%)	Criteria
1	Server of COMPILE Application	4.5	90	Very Good
2	Competence (Key-takeaway) Category	4.8	95	Very Good
3	Punctuality Category	4.7	93	Very Good
4	Leave Permit Category	4.8	95	Very Good
	Application General Performance (Recapitulation)	4.7	93	Very Good

Based on the data in the table above, the results of the assessment from the validation test by IT expert show 90% with very good criteria on application server performance. The competency category (key takeaway) scores 95% with very good criteria. The punctuality category's score percentage is 93%, with very good criteria. While in the leave-permit category, the score percentage is 95%, with very good criteria. Overall, the result of product validation testing by IT experts is 93%, with very good criteria. Based on the results of expert validation tests in this study, it can be concluded that this Discord-based COMPILE application is categorized as "Very Good." Thus, the application is ready and feasible to be implemented in limited field tests along with users.

A Management expert does the next validation as the material expert. While for the validation assessment result done by the management expert in Table 2 showed a score of 84% for the overall performance of the COMPILE application. The validation aspects classified in technical quality show good criteria with a result of 85%, usefulness quality shows good criteria with a result of 78%, server attributes in COMPILE application shows good criteria with a result of 87%, as well as a result in the attributes in Leave Permit category which also shows good criteria with the result of 87%, attributes in Punctuality category shows the result of 100% with very good category. The attributes in the Competence category show 90% as a result, so this aspect is also in very good criteria.

Table 2. Management Expert Validation Results

No	Aspect	Result (%)	Criteria
1	Technical Quality	85	Good
2	Usefulness Quality	78	Good
3	Server attributes in COMPILE Application	87	Good
4	Attributes in *Leave Permit Category*	87	Good
5	Attributes in *Punctuality Category*	100	Very Good
6	Attributes in *Competence Category*	90	Very Good
	COMPILE Application Overall Management Performance	84	Good

Limited field trials were conducted that included the school directors, curriculum coordinators, teachers, and foundation admin staff. The data collection instrument used was an interview with the curriculum coordinator as the management representative and a questionnaire with all user roles in the application, which the results are shown in the form of quantitative data in Table 3. The overall results of this user validation test show a score of 82% with "Good" criteria, as shown in Table 4.

Table 3. Results of Limited Field Trials Result with Users

User	Result (%)	Criteria
Teachers and Education Staff	82	Good
School Management Representative (curriculum coordinator)	74	Good

Table 4. Recapitulation of Limited Field Trials Result with User

User	Result (%)	Criteria
Teachers, education staff, and school management representative	82	Good

Data from the results of limited field trials obtained 82% on validation with teachers and staff and 74% on user validation with curriculum coordinator. The aspects assessed in the user validation test are display, ease of application operation, application usefulness, and technical quality of the application presented in Table 5.

Table 5. Recapitulation of Application Based on Specific Aspects Result by User

No	Aspect	Result (%)	Criteria
1	Display	78	Good
2	Ease of Application Operation	78	Good
3	Application Usefulness	83	Good
4	Technical Quality of Application	85	Good

Discussion

Human resource management in an organization is a challenge because it is a strategic and primary factor for organizations to achieve precise targets and goals (Haq et al., 2012). Meanwhile, the management activity of teachers and education staff resources at Tunas Bangsa Elementary School Kuburaya has existed and been carried out. However, it still needs to be better organized and integrated, thus becoming an organizational weakness in managing the teachers and education staff resources it has. Based on the interview with the curriculum coordinator, the practice of Fayol's (1967) and Terry (Panpatte et al., V. D., 2019)'s management principles in the scope of teachers and education staff resource management has also been carried out at this school. As stated by Almasri that human resource management is a series of activities in planning, organizing, directing, and arranging for HR procurement, developing, providing compensation, integrating, maintaining, and terminating employment related to human resources to achieve individual goals, organizations, as well as society (Maghfiroh, 2020) as a means of school resilience (Putra & Asmendri, 2022). Tunas Bangsa Elementary School also manages teachers and education staff series, from planning needs, recruitment, and placement of teachers and education staff, coaching, improving competence and performance, assessing work performance, and terminating employment relationships. However, what becomes a weakness is that these activities are less organized, integrated, and well-documented, so the information and communication needed by interested parties become disconnected. Therefore, it is necessary to have an administrative system for all of these management activities in a more orderly and well-documented one. In this case, it is necessary to have a supporting device that is also considered important in managing an administrative system that can improve the effectiveness of teachers' and education staff resource management (Ushansyah, 2017) in Tunas Bangsa Elementary School.

Recording documents and information in human resource management is certainly based on the needs of the school organization, following the existing components of the scope of teachers and education staff resource management applied. Teachers and education staff are part of the school organization whose duties and responsibilities are in the Indonesian National Education System Law Number 20 of 2003 Chapter XI Article 39. Teachers and education staff as workers in the world of education also need to obey organizational rules and regulations where they work, including in achieving work

performance in keeping values, motivation, and educators' capacity (Fullan & Mascall, 2000), and implementing discipline is one of the values needed as well (Supiningsih, 2020). It is also part of the study of research and development of applications to improve the effectiveness of teachers and education staff management. Regarding the existence of a component of work performance assessment related to the promotion and replacement of teachers and education staff. Of course, this is not separated from the performance appraisal carried out by the Principal and School Director, one of which is the discipline of teachers and education staff (Wijaya et al., 2019). By Tunas Bangsa Elementary School, this discipline is related to implementing punctuality and attendance permits during working days. It will become the basis or reference for applying reward and punishment systems and promotion and replacement for teachers and education staff in their organization. For this reason, in developing this Discord-based COMPILE application, there is a Punctuality category and a Leave Permit category.

Tunas Bangsa Elementary School is one of the schools that applies this reward and punishment system to improve the discipline of teachers and education staff in its organization. The weakness is that information on the administrative system in the existing organizational hierarchy bureaucracy is not yet well organized and integrated. Where when sending notifications or submitting permits must be given to the principal, director, and admin staff separately, which has been considered less effective so far. So if there is negligence or technical obstacles to one of its processes, it will cause problems for the learning process in the affected class, and clarification needs to be made to parties who do not receive information. It will undoubtedly impact performance appraisal because lower positions are monitored and supervised by higher positions due to a hierarchy of organization authorities to ensure compliance and discipline with superiors' directives to carry out various organizational tasks and functions (Hoy, 2013).

The development of this Discord-based COMPILE application is also to accommodate the continuous interaction between personnel in using text-based social media as a means of communication can still be accommodated. The use of technology in management information systems is expected to increase the level of effectiveness in managing teachers and education staff resources at Tunas Bangsa Elementary School. Significantly if the technology used in this information system can be automated based on an integrated organizational hierarchy role so that sending information to interested parties becomes easier (Krisnandari et al., 2019); thus, the level of negligence in following organizational regulations and procedures can be minimized and mentioned that information technology also has the potential to be used in school reporting and administration systems that can help the run of school managerial bureaucracy procedures (Powa et al., 2021; Legi et al., 2020). In addition, considering the characteristics of school organizations that have a high enough awareness of technology utilization, it is okay if discord-based technology utilization is chosen to manage teachers and education staff resource management at Tunas Bangsa Elementary School. The discord application allows users to communicate intensively and actively in a real-time (RTC) network like other widely used social media. So any information can be immediately obtained from notifications and accessed anytime and anywhere using Android or IOS (Dayana et al., 2020). Currently, everyone is starting to know and have an account on Discord, as well as some teachers at Tunas Bangsa Elementary School, so agreeing with Lawrence, the researcher believes that Discord may also become part of the professional lives of its users. By using a Discord-based application, it is possible to create an application program in which the server, categories, channels, and roles can be customized with automation used as a means of written and verbal communication online

application that is effective and efficient. Besides, the application system itself, unlike Moodle or other VoiP applications, is not bothering the work of the mobile device (Lawrence, 2021; Tech-Based Teaching Editor, 2021; Kruglyk et al., 2020). Thus, with this Discord-based COMPILE application, the management of teachers and education staff at Tunas Bangsa Elementary School can improve effectiveness. The structural sequential concept used for the model development was the combined management principles from Fayol and Terry (Fayol, 1967; Panpatte & Takale, 2019), shown in Figure 2.
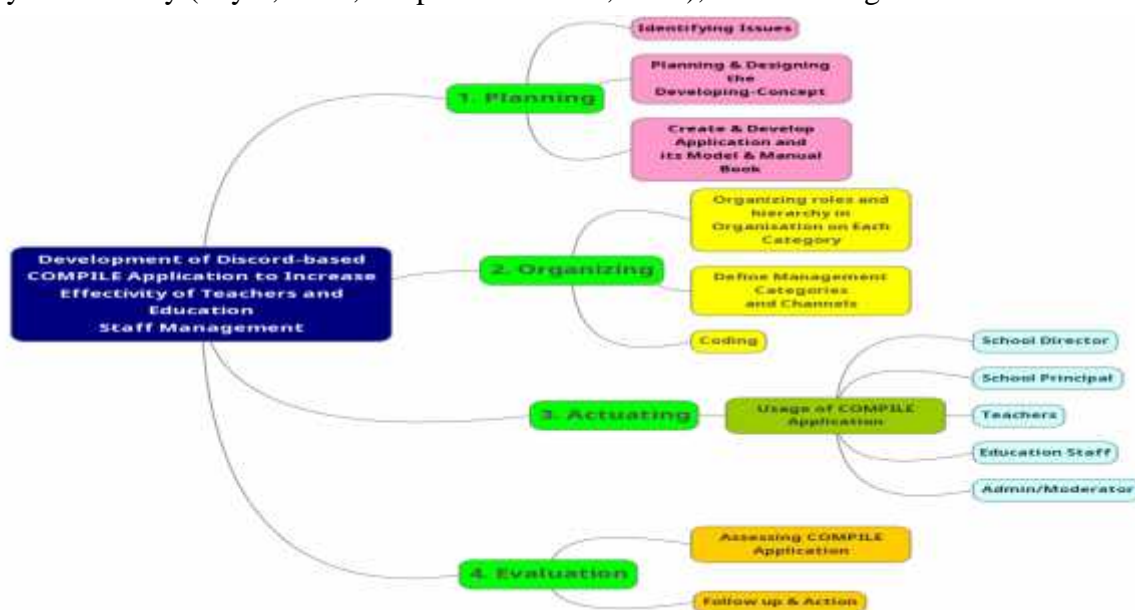

Figure 2. Development Sequential of Discord-based COMPILE Application

Based on the results using the developed Discord-based COMPILE application, this application can assist the school management in organizing and integrating information related to teachers and education staff resource management. The component that becomes the school's needs in this research covers three out of the six scopes of teachers and education staff resource management: competency development, punctuality of attendance, and submission of teaching attendance permit at school. After the limited field trial was conducted, the school stakeholders found out if the application was practical enough for them to get and share information about the training and development program, raise awareness of attendance punctuality, and shorten the process of applying for leave permit procedures. So, teachers and staff no longer need to send separate permit requests to their superiors. The existence of this application is expected to provide benefits for obtaining competent and high-performing workers, disciplined, harmonious, and effective school human resource management practice in general. In addition, the benefits for teachers and education staff are to shorten and simplify the flow of attendance permit applications, improve competence and professionalism, and a sense of responsibility and discipline (Purwanto, 2017). This application can be accessed by the school director, principal, teachers, and education staff with different access in their interface based on the roles set previously in every category in the application. So, each stakeholder will feel comfortable having contact in privacy for specific needs, for example, in the leave permit category. The principal and school director can also directly monitor activities in all categories. As for the primary admin or moderator, they have access to manage the administrative functions of this application, such as accepting and deleting users, reopening closed tickets, having access to all categories, downloading and printing ticket scripts, and any other function to manage the application's run. In connection

with the function of management principles, according to Fayol also Terry, namely planning, organizing, actuating, and controlling, designing the COMPILE application is a planned process to achieve school goals. So, by using COMPILE application to be implemented, it will help the organization to have qualified teachers and education staff in achieving the school goals.

Conclusion
The results of this study were a Discord-Based COMPILE Application Model in Improving the Effectiveness of Teachers and Education Staff Management to organize and integrate the information system in managing school human resources. The final purpose is to improve the discipline and performance of teachers and education staff. With the IT expert validity assessment yield of 93% and Management expert validity assessment yield of 84%, this application model was declared fit for a limited trial. While the results of limited trials on users with overall results reached 82%, the model was declared acceptable and can be implemented at SD Tunas Bangsa, Kuburaya. The scope defined to improve the effectiveness of the management of teachers and education staff in education units with the COMPILE application includes 1) a Competency improvement category, 2) a Punctuality of attendance category, and 3) an Organized and integrated system for requesting permission (leave-permit), which all are aimed to improve the effectiveness of teachers and education staff management.

Recommendation
In general, the categories in this application can still be customized according to the needs of school management with displays or other features based on future Discord application operating system updates. Specifically, there are recommendations to the school stakeholders: (1) The school director to implement a technology-based management application. By using technology as a tool, it is hoped that carrying out and implementing the management of the components of educators and educational resources in the school unit will be more accessible, well-organized, and integrated; (2) The school principal, by using technology will be helping in carrying out effective and well-documented managerial supervision and facilitating decision-making related to academic supervision; (3) Teachers and education staff, to utilize the application to upgrade the self-competence and skills in improving the four-basic-competences of teachers and education staff that can also be shared to the fellow teachers in school. By making these short recommendations, the researcher believes that the school unit will be able to improve the effective management of teachers and education staff in Sekolah Tunas Bangsa Kuburaya, West Kalimantan, to achieve its goals.

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