

Cadet Management at Aviation Schools: A Case Study at Politeknik Penerbangan Indonesia Curug

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ABSTRACT

Aviation schools in Indonesia have a fundamental problem concerning the quality of graduates who are less competitive. This problem cannot be separated from cadet management factor; thus this study aims to analyze the management of pilot cadets at Politeknik Penerbangan Indonesia Curug (PPI Curug). This study used a qualitative approach with a single case study design method. Data were collected using interviews, observation and documentation which were analyzed qualitatively with the stages of data reduction, data presentation and conclusion. The findings of the study indicate that in general PPI Curug has carried out the management of pilot cadets quite well which includes planning, organizing, directing, and monitoring. However, the management of cadets has not been specifically designed in a systematic and organized manner with clear and measurable indicators of success. From this research, a PilotQ application was also developed to get PPI Curug closer with airlines as a means of teaching industry and facilitate monitoring of cadets' achievements. Based on the results of this research, PPI Curug needs to make a special strategic plan related to cadets management, evaluating parenting patterns, integrating collaboration with users, developing methods to improve cadets' English language skills, and the need for commitment from airlines to support pilot schools.

Keywords

aviation school, cadet management, vocational education

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Introduction

The aviation industry continues to experience growth in line with the increasing economic activity at the national, regional and global levels. Advancement in commercial aircraft technology has reduced operating costs, shortened routes and improved fuel efficiency (Air, 2020). It also has an impact on ticket prices being more affordable and increase the number of passengers. Boeing (2020) released the latest estimate of the average growth in world air transport in the period of 2009-2039 taking into account the Covid-19 pandemic of 4%, so there is a slight decrease from the prediction before the Covid-19 pandemic (4.7%). Likewise, Airbus (2020) estimates that world air transport can grow by an average of 4.3%, slightly down from the prediction before the Covid-19 pandemic (4.4%).

The growing aviation industry has resulted in increased demand for pilots. According to projections of the Cannada flight training institute CAE (2020), despite the Covid-19 pandemic, the Asia Pacific Region will need around 91,000 new pilots over the next 10 years or about a third of the total global demand. Boeing (2020) explains that the aviation industry is quite resilient in facing

various world situations, such as the September 11 Terrorist attack, the SARS virus and the 2010 financial crisis, therefore it is predicted that it will continue to grow in the next few years despite the Covid-19 pandemic.

Pilot schools being the main supplier of pilots are required to meet the needs of pilots both in terms of quantity and quality. Pilot is one of the factors that plays an important role in ensuring safety and security of flight. Bureau of Air Safety Investigation (1996), states that 70% of fatal airplane accidents involve pilots and pilot factors are most commonly associated with poor judgment and decision making. The National Transportation Safety Board (NTSB) report also shows that more than 88% of the causes of charter plane accidents and 50% of commercial aircraft accidents are caused by human factors (At Baum Hedlund, 2020).

In producing competent and qualified pilots, good and correct pilot school management is a success key factor. Aviation schools as a place to instill basic aviation skills needed by pilots must have an effective and efficient learning system so that the quality of graduates is in accordance with the standards required by the aviation industry.

According to Dwiwandoko (2020), there are around 2,000 pilots who have not been absorbed by the Indonesian aviation industry, 145 of which are contributed by Politeknik Penerbangan Indonesia Curug (PPI Curug).

The main reason for the large number of unemployed new pilots is the low quality of graduates. This was stated by Adi (2018) as Operations Director of Lion Air Group, admitting that it is difficult to accept new pilots due to competency factors that are considered not meeting airline qualification standards. In fact, the need for pilots in the Lion Air Group annually is around 150-300, but only about 55 people are absorbed in 2017. In December 2017 Lion Air Group opened a pilot admission quota of 150 people and there were around 300 applicants, but only 2 passed. The Presidium of the Indonesian Transportation Society (MTI), Poernomo (2016) also indicates the low competence of pilot school graduates in Indonesia, as evidenced by the fact that Indonesian airlines are more interested in recruiting foreign pilots than domestic pilot graduates.

In the learning process at school, many factors determine the quality of graduates, one of which is the management of students. Students are subjects in education so that they must be managed properly and correctly in accordance with management principles starting from the planning stage, organizing, directing to supervision. This also applies in the context of pilot schools, where the management of students also has an important role in determining the quality of graduates. For this reason, this article aims to conduct a case study on the management of pilot cadets at PPI Curug.

2. Literature Review

2.1. Management

Certo dan Certo (2016, p. 37) states that management is the process of reaching organizational goals by working with and through people and other organizational resources. Bateman, Snell, dan Konopaske (2018, p. 4) say that management is the process of working with people and resources to accomplish organizational goals. Kinicki dan Williams (2018, p. 3) also propose a similar idea stating that management is getting work done through others. From these concepts, one of the emphases is to synergize

various resources within the organization, especially human resources, in order to realize organizational goals.

The emphasis on management concepts is also on the aspects of effectiveness and efficiency in achieving organizational goals. Gulati, Mayo, dan Nohrian (2017, p. 8) explain that management is the act of working with and through a group of people to accomplish a desired goal or objective in an efficient and effective manner. Robbins dan Coulter (2018, p. 8) also have the same idea saying that management is involving coordinating and overseeing the work activities of others so their activities are completed efficiently and effectively.

In the management concept, there are management functions as the main activity in carrying out management practices, namely planning, organizing, directing, and controlling (Schermerhorn Jr. & Bachrach, 2018; Jones & George, 2017). Planning is concerned with setting performance goals and deciding how to make them happen. Organizing means organizing tasks, people, organizational resources to carry out work. Leading is an activity to inspire people to work hard in order to achieve superior performance. Control or supervision includes activities related to measuring performance and taking action to ensure the achievement of the desired results. These four functions are a cycle that will continue to be interrelated from time to time, so that one function will be an input for other functions.

2.2. Management in Educational Organizations

Management can be widely implemented in various organizations, one of which is an educational organization or a school. Schools are service organizations that are committed to teaching and learning with the ultimate goal of student learning (Hoy & Miskel, 2012). Schools are different from other organizations, because they are required to be learning organizations, namely places where participants continue to develop their capacity to create and make achievements, new thinking patterns are encouraged, collective aspirations are fostered, participants learn how to learn together, and organizations expand their capacity to make innovations and solve problems.

Educational management is an educational system and design that leads to increasing human resources so that the achievement of organizational goals can be realized (Saitis & Saiti, 2018). Education management is also a management design that leads to teaching effectiveness, clarity of learning objectives and values that can improve the quality of education (Cicmil & Gaggiotti, 2018). Educational management is a set of policies, practices, standard attitudes, actions and instruments used by an educational institution to intervene in human behavior and direct it for jobs that are in line with organizational goals (Lemos & Liberali, 2019). Management in the context of educational institutions is designed to produce an effective teaching system and set clear targets and build values so that the results or output of education are of higher quality.

2.3. Vocational Education

According to Rashtriya (2008)) vocational education is a totality of experiences so that a person learns and is ready to be involved in work as part of a lifestyle or livelihood. Organisation for Economic Cooperation and Development (OECD) (2010) also explains that vocational education is a group of educational and training activities organized to complete predetermined goals and equip people with the skills and competencies needed to get a job. Brunetti dan Corsini (2019) state that vocational education is different from general education which is often academically oriented, providing the knowledge and skills needed to continue to higher education. The type of skills in general education is characterized by a general level of cognitive skills to enable getting jobs in a wider variety of tasks and occupations; whereas vocational education provides practice-oriented knowledge and skills required in a particular job.

3. Method

This study uses a qualitative approach which aims to explain the management of pilot cadets at Politeknik Penerbangan Indonesia Curug. The research method is a single case study design with the reason to focus the research problem on one unit of analysis and this method can reveal the problem in detail and comprehensively. Data were collected using in-depth interviews, observation and documentation study. In-depth interviews

were conducted with key informants from the management and stakeholders of the PPI Curug. Data analysis was carried out qualitatively through the stages of data reduction, data presentation, and conclusion drawing. Data processing used coding and data validity was tested with source triangulation.

4. Result And Discussion

4.1. Planning Pilot Cadets

Fernandez (2011) states that the quality of school planning significantly affects academic performance. Caputo dan Rastelli (2014) say that school improvement planning has a significant impact on student achievement. Planning that is carried out is related to the analysis of the educational context as a fundamental step for planning effective and specific improvement interventions, diagnosis of student needs, and detection of improvement objectives for planning specific and detailed activities.

The planning efforts for pilot cadets at PPI Curug are shown by a number of activities which include needs analysis, socialization, selection, and orientation. These activities are the initial activities that are carried out before the admission of new cadets and are carried out regularly every year according to the cycle of new cadets admission.

First, it concerns the problem of needs analysis. Needs analysis is a very important activity to be carried out in every activity, which is understood as an activity to systematically collect and analyze all relevant information needed in an activity (Shi, Yan, & Kong, 2019), or it can also be an activity of collecting, prioritizing, and document the information needed as input (Kavanagh & Thite, 2009). Particularly in the context in schools or educational institutions, this needs analysis is done for several purposes, namely: helping to determine the process to be done in school improvement and what to learn, providing information that helps planners to decide the process appropriately, increasing the level of approval of the decisions taken, develop coordination in schools, and facilitate solutions to problems that may occur in the planning stage (Dağ & Gümüseli, 2011).

The needs analysis at PPI Curug is carried out to determine the quota for new cadets, facility readiness, room availability and other related

matters. The findings in this study indicate that PPI Curug has carried out a series of needs analyzes in the context of new cadets admission for a period of 5 years according to the admission pathway. Some of the information extracted as input is the availability of instructors, the availability of training aircraft, training areas, dormitory capacity, class capacity, and graduate absorption. The results of the needs analysis are used as the basis for determining the quota of cadets and they do not rule out the possibility of adding or reducing the admission requirements for cadets from those previously determined considering the policy changes.

The second aspect as a part of planning in cadet management is socialization activities. Socialization in this context is an effort to disseminate information to the wider community through various media, both print and electronic. The findings in this study indicate that PPI Curug in every period of admission of new cadets always conducts socialization by the Ministry of Transportation and PPI Curug well. All media are maximized to provide information to all levels of society through Facebook, Instagram, Twitter, Youtube, the official PPI Curug website, and the official website of the Ministry of Transportation. This shows openness and transparency in the process of new pilot cadet admission at PPI Curug which is a demand for every public agency. In government career development schools, admission of new cadets is socialized with the same name, namely through the *Seleksi Penerimaan Calon Taruna* (Sipencatar) or Cadet Candidate Admission Selection program.

Furthermore, the aspect of selecting new cadets is a very important part of the process of new cadet admission because it will greatly determine the quality of the new cadets who will be recruited. Mondy dan Martocchio (2016) state that making the right hiring decisions is the most effective way to increase productivity. This also applies in the context of cadet admission selection, especially for pilot cadets, who require high qualifications to be accepted. In other words, this selection is a crucial part of the process of determining input, so that the team given the task of making the selection must really do its job properly, carefully and objectively in giving the assessment. This is to ensure that the new cadets who are accepted are actually cadets who have met the predetermined

minimum requirement because if there are cadets whose requirements are not met but can pass, then problems arise later on. Therefore, the selection process must be carried out carefully, because in the end it will also have an impact on the quality of graduates and become a gamble on the reputation of PPI Curug.

The last stage of cadet planning is orientation activity. This orientation is a basic activity and a start for cadets before undergoing the teaching and learning process at a later stage. Orientation is considered as an effort to help students make a successful transition from their previous environment to a new experience aimed at making academic preparation, personal adjustment, and increasing student awareness during the transition process (Owusu, Tawiah, Sena-Kpeglo, & Onyame, 2014). In the study of Bristow dan Schneider (2003) several important indicators in student orientation activities are: (1) higher education provides useful lessons; (2) immediate complaint handling; (3) helping students achieve goals; (4) provide quality services; (5) cares about the family's financial condition; (6) provide a good experience in learning; (7) feel that students are important; and (8) realize that the needs of students are as important as the needs of lecturers and employees.

Orientation activities are very important because these activities have evidenced to have a positive impact on students' mentalities, such as affecting students' trust in higher education (Abd & Lubis, 2018). Other findings indicate that orientation activities affect student academic achievement (Busby, Gammel, & Jeffcoat, 2002; Davis, 2013). The findings in this study indicate that PPI Curug conducts orientation activities in the form of *Madabintal* and *Ormatdirga* as a means of building basic character and introduction to the campus environment. Many activities are carried out during the orientation period at PPI Curug, such as introduction to the history, organizational structure, facilities, study programs, rights and responsibilities of cadets, conducting activities to build teamwork and get to know each other, train communication, and doing exercise together. The essence of orientation activities at PPI Curug is to build the basic character of cadets and prepare for transition and adaptation periods for cadets, so that cadets are ready to follow the teaching and learning process. The implementation of

orientation at PPI Curug also prohibits activities with violent nuances from senior cadets to new cadets as often happens in government career development schools, because in their implementation they are always supervised by dorm parents. Orientation activities in the form of *Madabintal* and *Ormatdirga* implemented at PPI Curug are found appropriate. However, the implementation must be well organized and formulated in order to have clear success measures so that it is easier to carry out evaluation.

4.2. Organizing Pilot Cadets

With regard to the management of pilot cadets, there are several important aspects related to the organization of cadets, namely the instructor-cadet relationship, class management, field practice management, learning approaches, facilities and infrastructure. These five things are important resources that determine the success of learning.

First, it concerns the relationship between instructors and cadets. Xu dan Yang (2019) explain that the relationship between teachers and students is the most fundamental relationship in the educational process which is the key to students' academic, social, and emotional development, and can affect the educational environment as a whole. Sabol dan Pianta (2012) argue that a positive relationship between students and teachers can serve as a developmental asset for students, because children who have a closer relationship with teachers tend to have higher academic achievement, lower externalization behavior, and better social skills. Košir dan Tement (2014) also emphasize that the relationship between teachers and students affects student achievement, while Farmer (2018) shows an important role in teacher-student relationships in determining student learning motivation. Gonzalez (2016) also explains that the relationship between students and teachers plays a big role in the trajectory of academic success and student social development and helps students feel more comfortable and safe in the classroom environment.

The findings in this study indicate that the pattern of relationships between instructors and cadets at PPI Curug is open and familial, in which the instructor portrays himself as a father or older brother. With such a relationship pattern, the

teaching and learning process is not rigid and provides a balanced two-way communication opportunity so that more interactive learning emerges. Instructors at PPI Curug in the teaching and learning process are open to input, criticism, and suggestions from cadets either directly or through other media that have been provided. The instructors at PPI Curug tolerate differences in opinion of cadets and use discussion as a medium to discuss differences of opinion. Instructors also provide ample opportunities for cadets to express their ideas which are considered innovative and creative, so that they are continuously encouraged to be courageous and confident in expressing their ideas. Such learning models are clear indicators of learning that place cadets at the center of learning, so that cadets are encouraged to be active in learning activities.

It is important for classrooms to be well organized, so they need to be designed in such a way that can make cadets and instructors feel comfortable in carrying out teaching and learning activities. The number of students per teacher is generally associated with class size and it is largely believed that smaller classes provide better teaching and learning (Blatchford & Lai, 2012). Koc dan Celik (2015) show a negative relationship between the number of students and teachers, in which, for one teacher, the greater the number of students, the smaller the student's achievement. In addition to class size and teacher-student ratios, designs are also important and affect the absorption of students in receiving learning material, which in turn has an impact on student academic achievement. Cheryan, Ziegler, Plaut, dan Meltzoff (2014) emphasize the importance of aspects of lighting, sound, temperature, air quality, and accessibility in designing classrooms that effectively improve student achievement. Barrett, Davies, Zhang, dan Barrett (2015) research shows that class design parameters explain 16% of the variation in student academic progress. The parameters used are lighting, temperature, air quality, ownership, flexibility, complexity, and color.

The findings in this study indicate that the PPI Curug has carried out good classroom management. Each class has a size and facilities according to the standards and also the ideal ratio between instructors and cadets. With these conditions, it allows the teaching and learning

process to take place effectively. Each classroom has met the technical standard, which is approximately 56m² according to the regulations stipulated in the Training Procedure Manual and is filled with 24 cadets. Meanwhile, the ratio of instructors and cadets is 1:24 and has also met the set standards..

Good practice management is also an important part to pay attention to in relation to organization of cadets. This is because pilot schools are vocational schools that use practice more than theory in their learning. The emphasis of vocational education is on student skills, so practical learning is prioritized. The research findings show that practical activities (ground and flight) have the greatest proportion of teaching and learning activities at PPI Curug, reaching 75% in non-diploma programs. Practical activities at PPI Curug are managed by following the Standard Operating Procedure (SOP) set out in the Training Procedure Manual (TPM) and the Training Course Outline (TCO) as well as following strict safety standards to ensure safety in practical activities. Aviation schools have different characteristics from other vocational schools, especially regarding risk factors, so they must be managed using the principle of very high precaution and adherence to established procedures.

Furthermore, at the organizing stage, another factor that is considered important is the learning approach. Chung dan Walsh (2000) underline that student-centered learning places students at the center of the school so that the main emphasis is on students, and students must direct their own activities. Lunenberg, Korthagen, dan Swennen (2007) also describe learning patterns that place students at the center of learning. Neumann (2013) sees student-centered learning as having different implications but important for students, teachers, and for the educational institutions. Student-centered teaching tries to engender active learning using methods such as cooperative learning, open-ended assignments, critical thinking exercises, simulations, and problem-solving activities (Felder & Brent, 1996). Student-centered instructional strategies are inspired by constructivist learning theory which is a set of assumptions about the nature of knowledge and learning, that is, the notion of what constitutes culturally constructed knowledge, rather than truth or facts; knowledge is distributed among group

members and group knowledge is greater than the sum of individual knowledge; and learning is an active, not passive, knowledge construction process (Andersen & Andersen, 2017).

A number of studies also show that student-centered learning has a significant effect on academic achievement (Felder & Brent, 1996; Kassem, 2018; Pai & Mallya, 2017), social skills such as providing opportunities for social acceptance and self-confidence and improving mental abilities (Felder & Brent, 1996), and increases learning motivation (Pai & Mallya, 2017). This shows that student-centered learning is effective in increasing the effectiveness of learning, so that the positive output is obtained, both in the form of academic achievement, as well as other competency aspects such as emotional and social competence.

The findings in this study indicate that the learning approach applied in PPI Curug is in line with leadership policies and demands for developments in modern teaching, namely learning that focuses its activities on cadets (student-centered learning). Cadets are positioned as subjects so that they are given great opportunities to explore and experiment with the subject matter discussed, while the instructor acts as a facilitator. Instructors become a bridge of knowledge for cadets, so that instructors act to direct, motivate, and guide cadets' learning activities. Instructors no longer act like lecturers who take place in one direction without providing opportunities for cadets to be more intensely involved in learning activities.

The learning model applied in PPI Curug is in line with a number of student-centered learning characteristics. In the context of learning at PPI Curug, it is also realized that knowledge is not only obtained from instructors, but can be obtained through interaction and discussion among cadets and giving freedom for cadets to experiment and explore a problem. Thus the choice of PPI Curug to implement a learning pattern centered on cadets is the right decision, because it is in line with current pedagogical developments, which place students at the center of learning.

The last aspects related to organization are the facilities and infrastructure to support teaching and learning activities. Several previous studies have shown the important role of the existence of

school facilities and infrastructure in influencing the effectiveness of learning and student academic achievement (Figueroa, Lim, & Lee, 2016; Ruhyana & Aeni, 2019; Timilehin, 2012).

The findings in this study indicate that PPI Curug has managed and provided complete facilities and infrastructure to support the smooth learning process. Aviation schools as vocational education in the learning process are very dependent on facilities and infrastructure, especially practical facilities, so that the availability of practical facilities and infrastructure is deemed necessary. The facilities and infrastructure that support the implementation of classroom learning and flying practice are very feasible and are categorized as very good both in quality and quantity, such as training aircraft, simulators, training area and laboratory facilities. PPI Curug's efforts to provide complete facilities and infrastructure are due to increase the effectiveness of learning so as to improve academic achievement of cadets. However, in order to meet the minimum standards which have been set, it is necessary to inspect and supervise these facilities and infrastructure so that they are still in prime condition when used.

4.3. Leading Pilot Cadets

The third stage of cadet management is leading. Leading in this case is closely related to the task of leadership in which the goals are to educate, guide and influence cadets so that they can follow the directions given by the leaders, be it directors, instructors, heads of study programs, dorm parents, and other parties involved in the cadet management.

The first aspect concerns the leadership of the leaders at PPI Curug. The findings in this study indicate that the leadership that is tried to be developed at PPI Curug is exemplary and serving, so that each element of the leaders must be able to become role models and servants for cadets. The leaders referred here are focused on the instructor, because it is the component at PPI Curug that interacts the most with cadets. So far, many examples of leadership elements at PPI Curug have been shown, such as in terms of punctuality, neatness in dress, politeness, cleanliness, friendliness, consistency between words and actions, showing commitment, and integrity.

The leadership model applied at PPI Curug is in line with the relationship patterns developed

between instructors and cadets and the learning model centered on cadets. In developing relationship patterns, the instructor tries to position himself as a parent or older brother figure. As parents or older siblings, instructors must be able to set good role models so that they can become role models in acting, behaving and speaking. Exemplary is an obligation for parents, so that they must be able to guide the behavior of cadets in accordance with the values, morals and ethics that serve as guidelines in general. Likewise, learning that is centered on cadets also requires that the instructor be able to act as a servant, because the instructor's function is more on the facilitator, so they must be able to serve the learning needs of cadets.

The role of the instructor as a role model is actually a necessity when looking at the teacher's function as an educator. Korthagen, Loughran, dan Lunenberg (2005) explain that teachers as educators do not only play a role in supporting student learning about teaching, but also as role models. The use of role models in leadership is also considered as one of the strong leadership characteristics in school leadership (Gurr, Drysdale, & Mulford, 2006). Leaders contribute first before followers (Qiu, Zhang, Hou, & Wang, 2018).

The importance of leading by example or role models for effective leadership has been recognized in many leadership theories, including self-leadership theory, ethical leadership, authentic leadership, and economic leadership (Yaffe & Kark, 2011). In the context of schools Versland dan Erickson (2017) state that principals can inspire through leadership to encourage staff to achieve personal educational goals, participate in school professional development, accept responsibilities outside the normative structure of job descriptions, and protect the school's mission. In addition to emphasizing the role model, leadership at PPI Curug is also encouraged towards servant leadership or steward leadership as a consequence of the relationship patterns that are built between instructors and cadets and the established learning model centered on cadets. Servant leadership means not leading from above the organizational structure, but from within a network of interpersonal relationships, so that more empowerment is used than controlling subordinates (Earley & Weindling, 2004). In the

context of schools in particular, servant leadership reflects leadership that is willing to serve common interests, so that leaders, be it the principal, instructor, head of study program and other elements of leaders are seen as a servant (Grace, 2005). School leaders who implement servant leadership must position themselves as servants who will prioritize the interests of school residents, especially students.

Servant leadership in a school context is believed to be one of the most effective leadership models, because it has a paradigm of encouraging subordinates, facilitating subordinates, and having a strong desire to build a school community (Schroeder, 2016). Schools can become stronger when leaders adopt, practice, and apply servant leadership (Stewart, 2015). Servant leadership in schools is also more acceptable because it is more effective (Zhang, Lin, & Foo, 2012). Thus the application of role model leadership and servant leadership at PPI Curug is the right choice because it has been proven to be effective in an educational context.

Activities that are still closely related in the scope of leadership are motivational and inspirational efforts. The findings of this study indicate that instructors and dorm parents provide a forward vision of the goals to be achieved, telling the parents' struggles to send the cadets to school, inviting alumni who have been successful to tell their experiences and struggles, giving challenges, sharing instructors' experience, always provide advice, and provide time for consultation for cadets who are having problems. In addition, they also share alumni success stories, share the latest developments in the aviation industry, and encourage cadets to convey creative ideas to be discussed together. These efforts are done in order to increase the learning motivation of cadets and encourage cadets to be more creative and innovative.

In addition to leadership, disciplinary guidance is also a very important activity to carry out the leading function. Discipline is an important character that cadets must have in order to participate in teaching and learning activities successfully. Discipline means a condition in an organization that has regularity, where members behave according to the rules and regulations, and behave in the organization (DeCenzo dan Robbins (2010). Discipline in doing teaching and learning

activities in the context of cadets is to obey both written and unwritten regulations. The findings in this study indicate that PPI Curug has made efforts to foster discipline for cadets by implementing rewards and punishments stipulated in the Cadets Regulations. Rewards are given in the form of embedding private pilot license (PPL) wings, scholarships for cadets who have great achievement, and weekend holidays. Punishment is given in various forms, from verbal, physical warnings, revocation of the right to spend the night outside, and letters of warning. In addition, discipline enforcement is also carried out by activities such as rollcall, line of march, discipline day, and English day. These activities are carried out regularly and consistently at PPI Curug to establish discipline for cadets..

Lastly, with regard to the leading of cadets at PPI Curug, is the parenting pattern. The parenting pattern needs to be reviewed because PPI Curug applies a boarding pattern for cadets. Cadets live in PPI Curug dormitory throughout the duration of their study and are not allowed to leave campus. This model was chosen by PPI Curug on the grounds that pilot schools need intensive teaching and learning activities which require cadets to continue to be on campus. The boarding model is also more effective in shaping the discipline and positive character (soft skills) needed in aviation world. Therefore, the choice of a dormitory model is primarily intended to increase the learning time for cadets, and to integrate the soft skills and hard skills that are demanded in aviation world. By living in the dormitory, cadets have more time to study and there is a better control over the daily activities of cadets.

Bass (2014) describes a boarding education program as controlled, in which students are assigned to attend structured educational, social, and physical activities from morning to night. These activities include classes, meal times, study times, sports, tutorials, extracurricular activities, and social activities with peers and dorm parents. With such a concept, boarding schools are considered to provide a number of benefits, such as providing an open-minded community, a safe and supportive environment, a place for all, and a foundation for a bright future (EF Academy, 2020), so the concept of boarding school is worthy of being selected and developed.

Dorm parenting has its own curriculum that complements the formal curriculum with an emphasis on building soft skills. Soft skills are an important requirement for cadets when they enter the working world with components such as responsibility, teamwork, leadership, communication, discipline, positive attitude, decision making, problem solving and integrity. In the context of aviation, soft skills are also very much needed. According to Monfries dan Moore (1990) one of the soft skills needed is interpersonal communication, which is the ability to understand other people, such as what motivates them, how to work, and how to work together, where it requires abilities such as empathy, encouragement, attention, being helpful, support, benevolence, sensitivity, social skills, and motivation. Dos Santos, Vieira, dan Morais (2014) state that communication is an important factor in managing critical situations, so that the lack of communication skills between individuals involved in air operations contributes to most of the accidents and incidents in flight. Lappas dan Kourousis (2016) also explain that the workforce in the aerospace industry in the future will face a much more diverse environment (multidisciplinary, multi-location, and multi-cultural), so that there are soft skills such as leadership, team spirit, three-dimensional thinking, risk definition and risk management which will become the determining factors for career success in the long term.

Food is also very important to pay attention to in dorm parenting. Every cadet must be ensured to get adequate nutritional intake, considering that the learning activities of cadets are quite dense so that they require adequate nutritional intake. For this purpose, PPI Curug also has experts to ensure adequate nutritional intake of cadets. Several studies have shown that nutritional intake has an effect on student academic achievement (Agatha, Djokosujono, & Utari, 2016; Burrows, Whatnall, Patterson, & Hutchesson, 2017). Health is also something that must be considered in dorm parenting. With the boarding pattern, PPI Curug is responsible for dealing with the health problems of cadets. Currently PPI Curug already has SOPs to handle the health of cadets. In a non-emergency condition, cadets are advised to independently visit health facilities to consult with doctors and obtain health services, but if the condition is an

emergency, active medical personnel come to cadets to examine and pick up sick cadets. In supporting the health of cadets both physically and mentally, there are activities such as sports, science, art, and music programs as a means to express the cadets' hobbies and artistic talents and there are also religious activities to strengthen the spiritual and emotional of the cadets. Togetherness is also maintained in the dormitory environment so that a strong sense of comradeship grows.

4.4. Controlling Pilot Cadets

Controlling activity is the fourth aspect in the management function of cadets. This function is important to do in order to ensure that all activities that have been planned for the management of cadets are carried out according to plan and detect deviations quickly so that the necessary actions can be taken. The first aspect of controlling cadets is monitoring teaching and learning activities. This monitoring activity is mandatory to ensure that learning activities take place effectively. Monitoring according to Allan dan Emily (2015) is an activity that involves continuous and systematic inspection and observation of a program or project. Cotton (2008), states that monitoring student learning is an important component of quality education, and careful monitoring of student progress is one of the main factors that distinguishes effective and ineffective schools and teachers and monitoring learning activities is also a strong predictor of student achievement. Baloian, Pino, Hardings, dan Hoppe (2014) also state that systematic monitoring of student work is a key success factor, because teachers will be better prepared to provide meaningful and timely feedback when they are aware of the current state of student learning. Monitoring activities significantly affect student academic achievement (Victor, 2020).

The findings in this study indicate that PPI Curug has carried out monitoring activities for teaching and learning activities. Formal monitoring is carried out by the Head of Study Program and the Safety and Quality Manager (SQM). PPI Curug also implements an open management system and inherent supervision, so that informally everyone is obliged to oversee the implementation of teaching and learning activities and activities in dormitories or dorm parenting. Inherent

supervision is mainly emphasized on the instructors who are continuously connected with the teaching and learning activities of cadets. Instructors must continuously monitor student learning activities and ensure that they are carried out according to established procedures and standards. If this inherent supervision is carried out properly, it will help a lot in supervising tasks at PPI Curug. Supervision is carried out periodically and incidentally depending on the needs and situations. The incidental supervision model is important so that all parties involved in learning activities always comply with applicable procedures and in accordance with the work plan that has been made and create an attitude to continue to be careful and vigilant, especially for instructors in carrying out teaching tasks. Supervision also involves external parties from the Directorate of Airworthiness and Aircraft Operations (DKPPU) by placing a Principal Training Inspector (PTI) and a Principal Operation Inspector (POI) to help carry out the supervisory and coaching functions of teaching and learning activities at PPI Curug. This is to ensure the feasibility and suitability of the training aircraft to be used as well as compliance in carrying out the rules contained in CASR and DGCA in order to ensure safety and security when the aircraft is operated. The involvement of DKPPU is also to maintain independence in supervision so that it has an objective assessment. The monitoring efforts carried out by PPI Curug are in line with the principles of good education management, which requires supervision activities, especially those related to learning activities. Learning as a central activity in educational institutions must be ensured that it runs well according to established standards and procedures, particularly for pilot schools that are strictly regulated in the learning process, so that monitoring activities must be carried out intensively and systematically so that there are no deviations from the procedure.

Another form of supervision in relation to pilot cadets is to evaluate the progress of student learning. PPI Curug conducts evaluation activities which are aimed at assessing the progress of cadets during a certain period. For ground school, the evaluation is carried out using summative and formative methods, and for flight practice the evaluation is carried out with modules to monitor

the progress of cadets at each stage of flight. Summative evaluation refers to a form of evaluation that is carried out at the end of each unit of time in which more than one subject is covered. The goal is to find out the extent of the progress of cadets from one material to another. Summative evaluation generally uses the form of a test at the end of a certain teaching period. Meanwhile, formative evaluation refers to an evaluation that is carried out at the end of each discussion of a subject or topic that aims at knowing the extent to which a learning process has gone as planned. Evaluation of learning outcomes is also used to determine the graduation of cadets and the standards currently used have exceeded the minimum standards specified in the regulations. Thus, it is hoped that cadets who have graduated from the PPI Curug already have adequate competence as a provision to enter the working world, because the criteria for determining graduation have been exceeded from the standard. However, this is certainly not guaranteed because of the demands on the aviation industry which is very dynamic and is always faster and more advanced than what is learned in pilot schools.

As part of its supervisory activities, PPI Curug also monitors its alumni. Therefore, PPI Curug continues to collect data and monitor alumni who collaborate with the Curug Pilot Alumni Association (IPAC) as a source of information and a forum for meetings and discussions. PPI Curug realizes that alumni have an important role in the process of developing PPI Curug to make it better. PPI Curug requires input from alumni so that they can make appropriate improvements according to the demands of the working world. Alumni can compare the relevance of the materials taught in college with real conditions in the workplace, so that they can provide an objective assessment of the extent of the link and match between the world of education and the world of work. Currently PPI Curug has also collaborated with alumni, for example in the form of sharing sessions and asking alumni to teach.

The role of alumni in the school development process if their existence is optimized cannot be denied. Tulankar dan Grampurohit (2020) state that alumni of an institution can play a very positive role in the transformation of higher education. also mentions several important roles

of alumni in the development of a university or college, namely: being a role model and inspiration, being a career mentor, providing expertise, providing opportunities in professional careers, increasing student recruitment, raising funds, and supporting campus reputation. The results of a study conducted by Fatima Shakil dan Un Nisa Faizi (2012) also show that alumni ties play an important role in the academic and administrative development of the university. Thus the efforts made by PPI Curug to continue to collaborate and continue to be connected with alumni is the right step as part of an effort to make PPI Curug more developed.

Relationships with users, namely airlines, in the context of cadet management at PPI Curug are also an important part of monitoring. Airline as the party that is expected to recruit graduates is important to be involved in the cadet management, for example in the process of curriculum formulation and determining graduation criteria. This involvement is needed because the airline as the user best understands what skills are currently needed at the airline, so that it can provide input on what kind of material should be given to cadets. The findings in the study indicate that currently PPI Curug is trying to further increase user involvement because it feels the role is quite strategic in improving the quality of graduates. The involvement is carried out by inviting the airline to take part in conducting tests on cadets 6 months before graduation. The nature of the test given is not used officially to determine student graduation, but rather in an effort to increase the confidence of cadets and as a means of asking for input from the airline as suggestions to improve the learning process at PPI Curug to relate to the latest demands in aviation world. The inputs given are very useful for PPI Curug to evaluate the curriculum and learning methods that have been applied so far.

4.5. PilotQ Application

Developing an application for pilot cadet profile is part of the cadet management, especially those related to monitoring the performance or academic achievement of cadets. The application is named "PilotQ" which was developed based on the Android program. The development of the PilotQ application is relevant to the currently developing digital era, so it can make it easier for

interested parties to monitor the development of cadets' academic achievements. The PilotQ application uses detailed data from the components used to assess the competence of cadets. There are three main components that are the object of performance assessment for cadets, namely: hard skills, soft skills and English language.

There are four main benefits of the PilotQ application. First, this application can be accessed by users, which in this case is airline, so that if the airline requires recruitment of fresh graduate pilots, it can be monitored early through the application to find out the achievements of graduates from PPI Curug. In this way the airlines will get a faster picture of the competence of graduates and make decisions quickly, so there is no need to wait long for graduates to submit job applications. The airline can also monitor potential students earlier who can meet the qualifications as needed. Second, for parents of cadets, it can be used as a means to monitor the development of their child's academic achievement. If they feel that their development is not satisfactory, then parents can provide motivation or do direct consultation with PPI Curug to discuss the progress of their child's achievements. Thus for parents this application can be used as a means of monitoring and motivating their children. Third, for cadets, this application can be used to monitor the progress of academic achievement of themselves and their peers, so it is hoped that stronger achievement motivation can emerge between cadets by knowing each other's achievements. Fourth, for PPI Curug, be it the director, instructor, head of study program, and other parties can periodically monitor the progress of cadets' achievements, so that they can be input in formulating the strategies needed to improve the quality of cadets. Interested parties can at any time monitor the progress of cadets' achievements without having to wait from the instructors.

5. Conclusion

PPI Curug in general has carried out good cadet management from the planning stage to the controlling stage. Planning for cadets begins with making a needs analysis to determine the quota of cadets, conducting socialization and selection, to orientation activities. Organizing cadets is carried

out by coordinating resources that support the teaching and learning activities of cadets so that they function optimally which focus on four aspects, namely managing the instructor-cadet relationship, class management, management of field practices, learning approaches, and facilities and infrastructure. In teaching and learning activities, the relationship that is developed between instructor-cadets is open and familiar so that cadets feel more comfortable in learning, thus they can optimize their potential. PPI Curug also provides classes with sizes and facilities that meet the standards and the ideal ratio between instructors and cadets and the ratio between practice and theory is 75%: 25% in non-diploma programs. The learning approach that is applied focuses its activities on cadets (student-centered learning), so that the role of the instructor is more as a facilitator. Instructors become a bridge of knowledge for cadets who are tasked with directing, motivating, and guiding cadets' learning activities. The facilities and infrastructure have been optimized to support the smoothness of the teaching and learning process, such as training aircraft, simulators, training areas and laboratories.

The leading process is emphasized on three things, namely leadership, disciplinary guidance, and parenting. The developed leadership is an exemplary model and serving. Each element of leadership is required to be a role model and servant for cadets and make motivational efforts and provide inspiration to cadets. Fostering discipline for cadets is carried out by implementing rewards and punishments as well as carrying out physical activities. Meanwhile, the parenting style is carried out in a boarding model with a curriculum that emphasizes the formation of soft skills with components such as responsibility, teamwork, leadership, communication, discipline, positive attitudes, decision making, problem solving and integrity. Controlling is carried out by monitoring teaching and learning activities, evaluating learning outcomes, monitoring alumni, and maintaining relationships with users. Monitoring of teaching and learning activities is carried out with a planned and programmed supervision. Supervision also involves DKPPU by placing a Principal Training Inspector (PTI) and a Principal Operation Inspector (POI). Learning evaluation is

carried out both for learning activities on ground school through summative and formative methods and for flight practices using a module system. Collaboration with alumni associations is also carried out to determine the competitiveness of graduates and cooperation for school development. From this research, the PilotQ application was also produced in order to respond to the development of digital technology and it is hoped that it can provide good benefits for users, PPI Curug, cadets, and parents. The PilotQ application provides fast and easily accessible information related to the achievements of cadets so that it can be a means of monitoring and evaluation.

Based on the findings of this study, it is very important for PPI Curug to carry out cadet management. Pilot schools must have a clear and measurable blueprint for the management of pilot cadets which contains aspects of planning, organizing, leading and controlling. Cadet management will determine the quality of graduates, so it must be a priority in the management of pilot schools. Cooperation with airlines as the main user of pilot schools also needs to be intensified and carried out in a programmed manner with clear targets. An airline as a user is a party that understands comprehensively the current competency requirements required in the aviation industry.

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