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Research Paper

Monitoring System Development and Evaluation of Character Building in Semarang Polytechnic Through The Utilization of Information Technology

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Abstract

The character can be interpreted as a character with psychological qualities, morals, or manners that distinguish one person from another (Poerwadarminta Dictionary Ministry of National Education, 2010: 44) . Character builder (character building) is the process of carving or sculpting the soul in such a way so that its 'shape' is unique, engaging, and different or distinguishable from others. Monitoring and evaluation systems Character Development in Cadets Polytechnic Semarang cruise via utilization technology information use method waterfall. It expands the system with a do approach systematically and sequentially, starting from the need system to stage analysis, design, and coding. Evaluation and testing of running information systems are needed for information system continuity alone so that the application can be used and utility to application high, needed testing use black box, interview as well as charging questionnaire to the user the usual single sign-on. Research results with testing black box show that results testing can say has worked with excellent and proper by a hope that the users' system has described; it proved with the enhanced weighted average value in a manner whole before and after system development so can conclude the system already used with good however it needs exists additional menus on soft skills and physical cadets.

Keywords: *Character; Technology Information; Monitoring and Evaluation*

INTRODUCTION

Transportation Training is the organization of the learning and training process to increase knowledge, expertise, skills, and the formation of attitudes and behavior of necessary human resources in the transportation administration. Organizing transportation as a vein in life, nation, and state requires prime, professional, and ethical human resources. To realize the intended transportation human resources, in addition to having technical competence in accordance with the field of work, it is also necessary to have a strong character in order to successfully operate its role in providing reliable transportation services to the community.

Transportation human resource character development focusing on *soft* formation *skills competency* needs to be carried out in an integrated, structured, planned, and tiered manner with the right method. The method that needs to be done is through the parenting method as an integral part of the process of organizing education and training as a whole. Parenting activities must be able to overcome the constraints that exist in the implementation of the process of education and training, as well as create a fresh environment and enthusiasm for learning or practicing as cadets at the Transportation Training Institute in the BPSDMP environment to realize excellent transportation human resources physically, professionally, how they work, and ethically.

The general objective of national education is to develop the potential of students to become human beings who believe in and fear God Almighty, have a noble character, are healthy, knowledgeable, capable, creative, independent, and become citizens of a democratic and responsible state, in accordance with Laws Republic of Indonesia Number 20 of 2003 concerning National Education. Through education, the character expected can cultivate mental and moral

conformity to Pancasila values as well as build a health and well-being physique aligned with the profession, expertise, and environment of his job.

Cadets are educated and trained with strict learning systems and methods, covering aspects of knowledge, understanding, and skills following the provisions stipulated in the IMO International Convention, STCW Convention 1978, and its amendments. In addition, mental, moral, and physical fitness development is also carried out in an integrated manner both through curricular and extracurricular activities.

LITERATURE REVIEW

Following the Decree of the Minister of Education and Culture of the Republic of Indonesia Number 719 /P/2020 concerning Guidelines for Implementing Curriculum in Education Units Under Special Conditions, Learning in Special Conditions is carried out contextually and meaningfully by using various strategies according to the needs and conditions of students, educational units and meet the learning principle. Therefore, Information Technology (IT) is a technology that helps humans create, change, store, communicate, and disseminate information that will be developed as an educational model. Character _ cadets at the Maritime Sciences Polytechnic

Monitoring is a routine process of data collection and measuring progress on program/ monitor objectives change, focusing on process and output. It involves our calculations and observation on coaching fitness physically done to cadets. Activity internal evaluation and monitoring coaching fitness physical cadets as follows:

1. Evaluation activity includes :

    Search talent/*talent scouting* carried out a fitness test body and skills base

2. Activity monitoring

    Achievement of targets obtained from activity

Evaluation parenting is form activities carried out to look for harmony level development quality attitude behavior found cadets _ in deed nor say during _ follow training For reach qualifications that have determined with refer to the guidelines parenting Cadets at Training Institutions Transportation in the BPSDMP environment. Evaluation results will be used to evaluate

Outstanding cadets will be given the awards with a provision as follows:

1. Outstanding cadets _ in education or things special obtain praise and appreciation ;
2. Compliments or awards noted in book pocket cadets ;
3. Awards embodied form sign special or number awards ;
4. Compliments or awards can revoke the return if there is a mistake ;
5. For outstanding cadets _ in the field, academic given awards each semester according to level of achievement ;
6. Special activity organization number award given in one-period management ;
7. Award figure No can be used as number subtraction from number error cadets ;
8. Award figures can be worn as material-related considerations _ with stipulated decisions _ For cadets.

Awarding Signs of Appreciation To encourage motivation to learn and practice for cadets by competing with good and healthy, those who excel are given several kinds of awards.

The achievements that are assessed are achievements that are general in nature, covering three aspects of the assessment: personality, physical, and academic, as well as special achievements due to his services in upholding the name of the Transportation Training Institute in the BPSDMP environment or the nation and country; The token of appreciation is in the form of an achievement badge that must be pinned on the uniform cadets always to remind the holders always

to maintain good achievements it has achieved.

Violation is an act that violates the provisions and regulations that have been regulated in the Guidelines for Caring for Cadets at Transportation Training Institutions in the environment BPSDMP, whether done intentionally or due to negligence. Taruna violations are divided into 3 (three) levels as follows:

1. Minor violations, namely violations that are not included in the category of moderate violations and severe or have not reached the critical limit value of semester violations.
2. Moderate violations are violations that are quite large in value but have not yet reached the weight category or as a result of the number of errors approaching the maximum limit monthly/semesterly.
3. Serious violations are violations included in the serious category or, due to a number of points, mistakes have exceeded the maximum periodic/semester limit and can result in cadets being dismissed from education.

Sanctions are an action imposed on cadets who aim to form highly disciplined personalities, maintain order and security, educate cadets on responsibility for their actions, foster a sense of empathy, and create an atmosphere conducive to the Transportation Training Institute.

For cadets who commit violations, sanctions will be given with the following provisions:

1. Violation of Rules of Procedure Cadets will be imposed penalty from error number and recorded in book pocket cadets ;
2. Besides the number of errors, cadets who do violation can impose penalties from action discipline, punishment discipline, and or penalty academic ;
3. Drop sanctions in the form of physical action must be characteristic educational and clear the goal as well as forbidden in the form of persecution ;
4. Giving punishment only can be done by caregivers directly;

Medium cadets undergo penalty form repeal right cruise moment semester breaks and holidays long day highway can postponed implementation penalty up to the learning process teach return going on.

RESEARCH METHOD

Draft research on development monitoring and evaluation system development character on cadets polytechnic knowledge cruise Semarang through utilization technology information depicted with framework draft as follows:

INPUT	PROSES	OUTPUT
1. Data Monitoring Taruna 2. Data Evaluasi Taruna	**Waterfall** 1. *Requirement Analisis* (Analisis Kebutuhan) 2. *System Design* (Desain Sistem) 3. *Implementation* 4. Integration & Testing (Integrasi & Pengujian) 5. *Operation & Maintenance* (Operasi & Pemeliharaan) **Teknologi Informasi** Pengujian *Black Box*	**Evaluasi Kualitas Informasi** 1. Kelengkapan 2. Aksesibilitas 3. Kesesuaian 4. Ketersediaan 5. Ketepatan Waktu 6. Keandalan 7. Konsistensi 8. Kejelasan 1. Laporan Inspeksi 2. Laporan Investigasi 3. Laporan Tindak Lanjut Pengambilan Keputusan

Figure 1. Framework Draft Study

Development monitoring and evaluation system development character on cadets polytechnic knowledge cruise Semarang through utilization technology information use method *waterfall*.

Method *waterfalls* are a development system with a systematic and sequential approach, starting from the need system and going to stage analysis, design, and *coding* [15] . For development monitoring and evaluation system development character on cadets polytechnic knowledge cruise Semarang through utilization technology information, is required Input data in the form of evaluation data character cadets award, violation, sanction, condition, dismissal as well as results soft skills and abilities obtained and earn output (*output*) in the form information inspection and investigation. Output in the form information will evaluate quality information based on aspect convenience, completeness, availability, suitability, and accuracy time. Monitoring and evaluation system development character on cadets polytechnic knowledge cruise tested functional use method *black box*.

Data used in the study These are primary data and secondary data. Primary data is data obtained directly from the subject study with the use of tool measurement or tool data collection, while secondary data is data obtained in a manner No direct from the subject study or from another party besides the subject research. Primary data was obtained with method interview in-depth (*in-depth interviews*), observation (observation), testing system, and evaluation (questionnaire).

FINDINGS AND DISCUSSION

The development of Android-based Application information technology is a process of changing system-based computers or targeted websites. For easy storage, search, processing, and presentation of data, it becomes an educational model information useful character in the process of decision making. Development technology information based android application done For repair technology information about the existing character education model There is previously and developed based on problems found inside system information before. Development overcomes existing problems as well as important information to simplify the educational process of character Cadets.

Table 1. Development monitoring and evaluation system development character

No	Respondents	Availability	convenience	suitability	Completeness	Time Precise
1	R1	√		√	√	√
2	R2	√	√			√
3	R3	√	√			√
4	R4	√			√	√
5	R5	√	√	√		√
6	R6	√	√	√		√
7	R7	√	√	√		√

Development monitoring and evaluation system development character on cadets polytechnic knowledge cruise Semarang through utilization technology information is with done, existing information on Siakad PIP Semarang with menu additions, kindly more clear solution For the problem can see in the table following this :

Table 2. Problem Solution Identification

No.	Problems	Proposed Solution
1.	Information cannot be accessed directly by *the user*	Information systems are developed with users in mind Which own right access each so that *user* Can directly access information Which needed.
2.	Vulnerable to data loss.	The system was developed using *MySQL* database that can store large amounts of data.
3.	Difficulty finding data when needed	The system is equipped with a " *search* " menu so that it is easy to search for data required.
4.	Difficulty in analyzing data with a large amount of data	The system was developed to analyze and process large amounts of natural data.
5.	Difficulties in report approval.	The admin will have a user account to approve inspection or investigative data done.
6.	The form of the resulting information is not as expected.	Technology generated information based information educational model android application character The new one is in the form of tables accompanied by graphs that are easy to read and understand.
7.	Timing inaccuracy in processing and processing data and inaccuracies in time serve and report information.	Developing a system that makes it easier for users to *input, edit, and delete* data so that reports are reported on time.

The flow chart application character building Cadets Polytechnic Knowledge Shipping (PIP) Semarang is as follows:
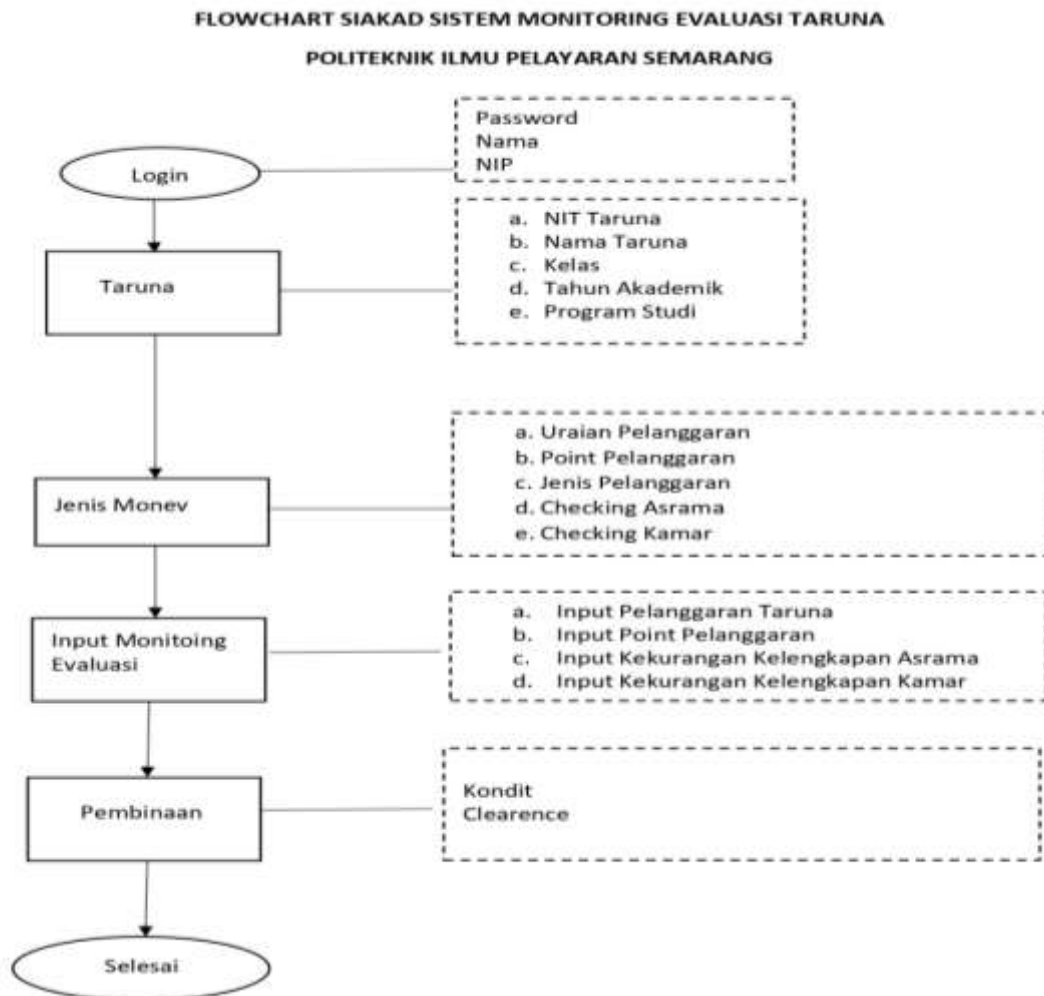

Figure 2. System Flowchart Monitoring and Evaluation Information Cadets Shipping (PIP) Semarang

Monitoring and Evaluation System Development for Semarang PIP Cadets Web User Interface Design
1. Login to Kapusbangkataris
    a. https://ssov2.pip-semarang.ac.id/login?url=https://siakad.pip-semarang.ac.id/
    b. Enter User and Password Kapusbangkatharsis
    c. Click the Login button
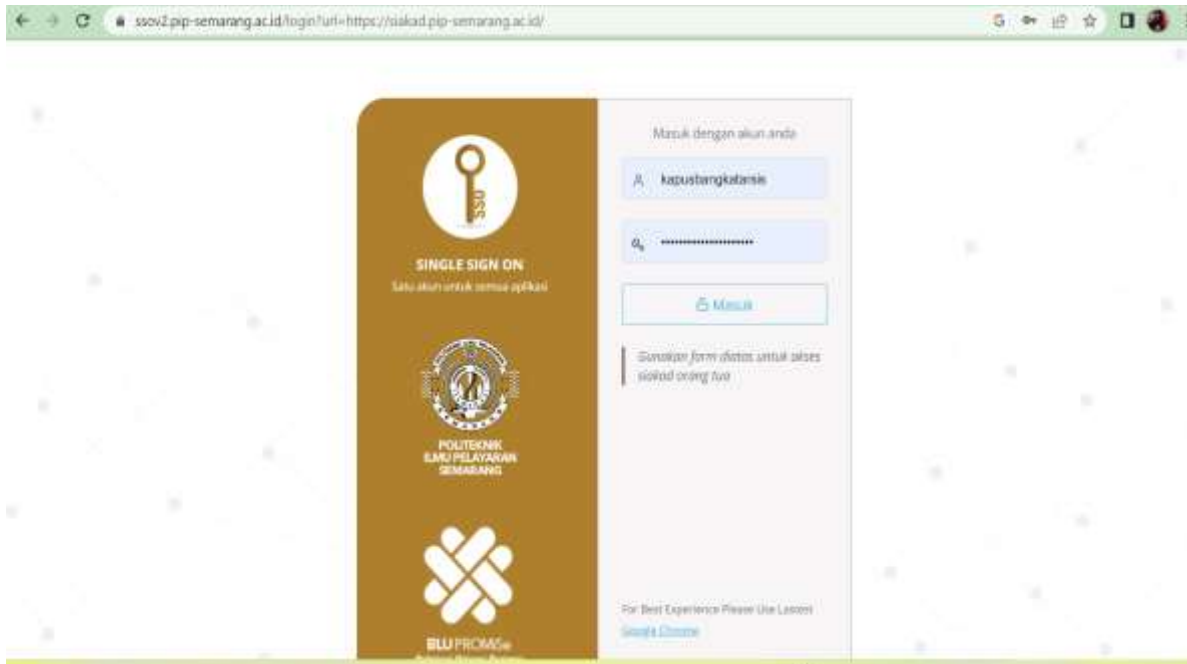
Figure 3. Login Kapusbangkatarsis

2. Dashboards

The dashboard contains a list of *reports* cadets on history _ Accommodation, and hostel. In the left, there is also a menu panel containing Report Data, Master Data, Feature Data, and Settings.
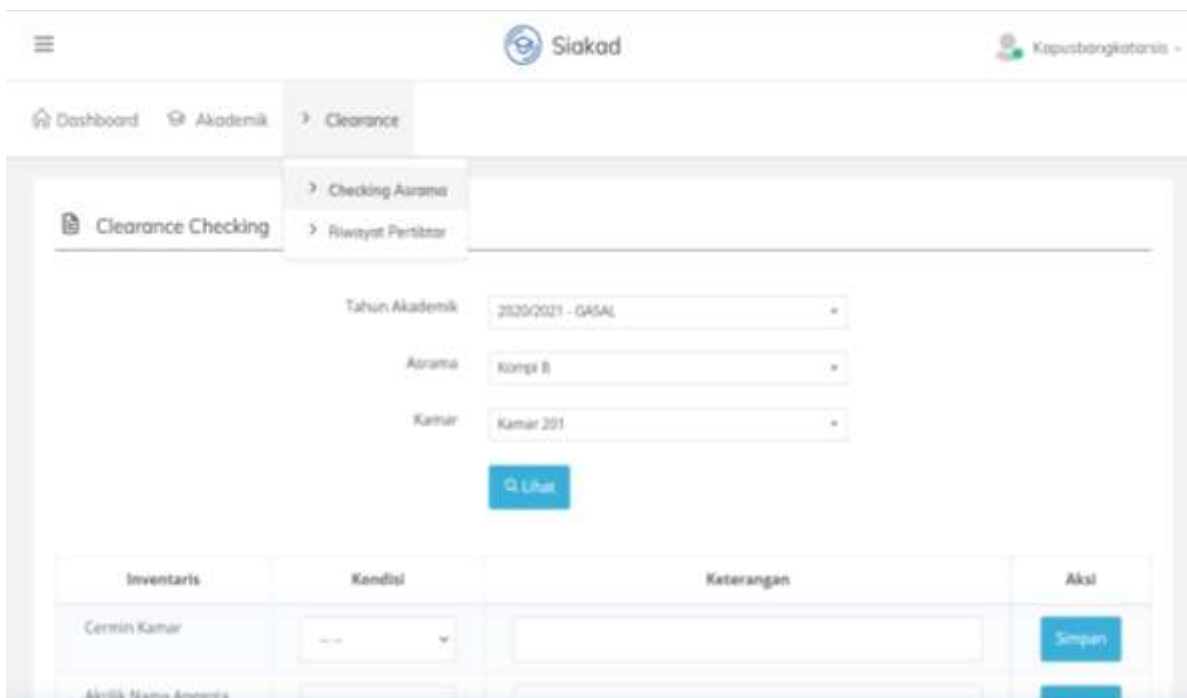

Figure 4. Dashboard Menus

a. List Menus

Report

1) Discipline History Report: Type Violation
2) Backup Report: For backup, Type Violation
3) Dormitory Checking Report: Contains a report on Dormitory Completeness

4) Dormitory Backup Checking: For check completeness, hostel shortage

Masters
1) Type type violation
2) Type violations and points
3) Dormitory equipment
4) clearance
5) condition

Feature
1) Number of violation points
2) Lack hostel equipment

Settings
Users: For clearance cadets

3. Battalion Login
   a. https://ssov2.pip-semarang.ac.id/login?url=https://siakad.pip-semarang.ac.id/
   b. Enter User and Password battalion
   c. Click the Login button
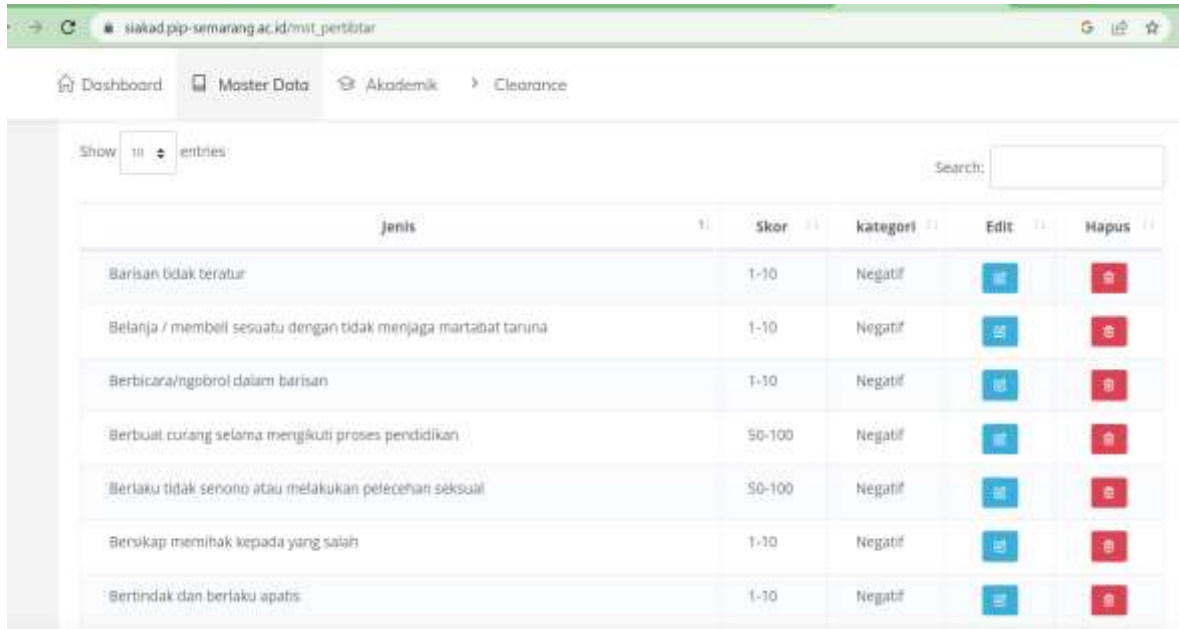
Figure 5. Battalion Login

Filters are available for group data:
1) History database Order
2) grouping type violations and violation points based on order
4. Negative Point Database
   Used For *database of* cadet types and negative points as mark condition

Figure 6. Backup Report

Backup reports are used for :
a. back up type violation
b. Classification data violation

5. Positive Backup Points
   Positive backup points used For View and save a list of positive points Cadets as follows:

Figure 7. Database of positive points

Admin menu steps positive point backup is as follows
s:

    a. Type Activity
    b. classification
    c. positive points

6. Negative and Positive Input Points

    Positive Points in accordance with Order No reduce from mark negative cadets and become mark conclusion mark condition.

Figure 8. Observational Value Cadets

Table 3. Testing the Application Login Form

No.	Function	Testing	output	Status
1.	Displays *the login form* application	Open the app for first time	*form* appears *Login*	Good
2.	Displays *passwords*	Click the checkmark on *the login form*	Displays *passwords*	Good
3.	Distribution of access rights	*Enter username* and *Passwords*	Displays menus according to access rights	Good

Testing (*testing*) is done with test application from facet *user interface* and actions *create, read, update* and *delete* from application to databases. Testing This is done in a manner over and over again To ensure application walks with Good in accordance with desired design and functions . _ Testing This For finding a weaknesses or possible bugs is in the application made so that it can quickly be handled and repaired so that quality applications to be used the more improving .

Table 4. Testing Admin Pages

No.	Function	Testing	Output	Status
1.	Management *user*	*Create, read, update, delete (CRUD)* on *form user*	Showing results *CRUD*	Good
2.	Management connection *databases*	Click connection	Showing *Forms* connection *databases*	Good
3.	Cadets data management	*CRUD* Data Cadets	Showing results *CRUD* Data Cadets	Good
4.	Application *master* data management	*CRUD master* data	Showing results *CRUD master* data	Good
5.	View and print data	Click *report* and *print*	Showing results recapitulation	Good
6.	*Log out* process	Click *log out*	Showing choice yes or No For *log out*	Good

The results of the development of educational models character through utilization technology information based cadet android application level 1 Polytechnic Knowledge This Semarang cruise Already walk with Good in a manner functional after fixed it the mistakes that have been found before. However , after implementation No close possibility that error or bugs can be found and the application needs repair back .

Table 5. Test Results Aspects Quality Information

Criteria Evaluation	Before Development		After Development		Difference weighted average
	Amount assessed components _	Weighted average ng	Amount assessed components _	Weighted average ng	
convenience access	7	1.95	7	3,5	1.55
accuracy	7	1,8	7	3	1,2
Accuracy time	7	2	7	3,5	1.5
Completeness	7	2	7	3,62	1.62
suitability	7	2	7	3,41	1.41
Overall average		1.95	3,40		1.45

The results of the evaluation of the quality of the information found that the development of a monitoring and evaluation system for character building in cadets of the Semarang Maritime Polytechnic to support evaluation has been able to overcome information quality problems in the form of ease of access, completeness, suitability, availability, and timeliness. It can be seen from the overall weighted average value before system development of 1.95 and after system development is 3.40, with a difference of 1.45. Thus, it can be concluded that there is an increase in the quality of the information generated after the development of the system.

CONCLUSIONS

The design for developing a monitoring and evaluation system for character development for Semarang Maritime Polytechnic cadets has a login page feature, a character education feature, and a confirmation page. The system is managed and used by admin and IT.

Black box testing shows that the test results can be said to have worked well and correctly according to the expectations outlined by the system user. Testing the quality of information on the development of a monitoring and evaluation system for character building for Semarang Seafaring Polytechnic cadets, which was tested before and after system design based on aspects of convenience, suitability, availability, completeness, and punctuality aspects, can be seen to have increased. It is proven by an increase in the overall weighted average value before and after system development, with a difference of 1.45.

Regular monitoring and evaluation are needed to minimize problems and obstacles in the system. The previous system was not equipped with a menu to determine the development of soft skills and cadets' abilities, so an additional menu was needed for the results of evaluating cadets' soft skills and cadets' abilities in carrying out development monitoring so that it became a menu for further development in cadet evaluation monitoring system.

REFERENCES

Ali Muhtadi, "Utilization of Information and Communication Technology (ICT) in Character Education in Schools," *Beneficiary. Technol. inf. Dan Commun. In Educators. Characters In School.* , pp. 1–13, 2011, [Online]. Available: http://staff.uny.ac.id/sites/default/files/132280878/18. Utilization of ICT in Character Education in Schools-proceedings.pdf.

AS Lestari, "Utilization of Information Technology in Character Education," no. November, pp. 1–20, 2014.

I. Syasmita *et al.* , "Utilization of Information and Technology (IT) in Character Education in," vol. 2, pp. 638–641, 2018.

Kim Changmin, "Teacher Beliefs and Technology Integration," *Teach. Teach. educ. J.* , vol. 29, no. 2, pp. 25–30, 2013.

Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System Mulyasa, *Character Education Management* . Jakarta: Earth Literature, 2011.

N. Chanifah, "Design of Character Education in Public Higher Education," pp. 47–48, 2015.

Ni'mawati, F. Handayani, and A. Hasanah, "Models of Managing Character Education in Schools During a Pandemic," *J. Stud. Islam* , vol. 1, pp. 145–156, 2020.

S. Adhitya Rol Asmi, Aulia Novemy Dhita Surbakti, Hasan Greece, "Development of Android Application-Based Mobile Learning Models in ASEAN History Courses," *Candrasangkala J. Educator. and Sej.* , vol. 5, no. 1, pp. 30–40, 2019.

S. Aisyah, "Development of Android-Based Android-Based Media for Introduction to Local Wisdom of Cirebon Culture as a Media for Character Education for Students," *Logic* , vol. 17, no. 2, pp. 37–41, 2016.

Y. Yuliana, "Learning Innovation Through Information Technology: Development of Learning Models Through the Internet," *J. Isema Islam. educ. Manag.* , vol. 4, no. 1, pp. 119–132, 2019, doi: 10.15575/isema.v4i1.5179.

Zubaedi, *Character Education Design: Conception and Its Application in Educational Institutions* . Jakarta: Kencana Prenada Media Group, 2012.