Technology-Aided Document Management System of The Registrar's Office In the Division of City of San Jose Del Monte, Bulacan Towards Efficient Student Service

MARIA LILLIBETH L. WONG

Department of Education, Region III

Schools Division of San Jose del Monte, Bulacan

Abstract:

School Forms are the primary documents in public schools' operations. It includes student and school records which contribute to the important data needed to be consolidated and analyzed eventually to evaluate student performance in an academic year. While it performs a vital role in the consistency of learner information, School Forms also depicts the overall performance of an institution in many aspects based on how it was managed under different criteria. There are established guidelines in the management of school forms as designated to the Office of the Registrar. As stipulated in DepEd Order (DO) No. 54 s.2016 establishing the standard processes and protocols on the request, and release of learners' Permanent Records and Report Cards in all public schools nationwide. The study used the descriptive method. Descriptive research may be defined as a purposive process of gathering, analyzing, classifying, and tabulating data about prevailing conditions, practices, beliefs, processes, trends, and cause-effect relationships and then making adequate and accurate interpretations of such data with or without the aid of statistical methods. The respondents of the study comprised of the designated registrars of Schools with an established Registrar's Office which can be substituted by an Administrative Officer or Administrative Staff functioning as School Registrar or any teaching personnel performing an ancillary function as the school registrar. The School Head or Principals were also counted as a respondent as the implementing group of Registrar's Office policies. Selected teachers

and the parents will respond to the stakeholders' group on the services rendered by the office. The respondents provided data that were beneficial in determining the effectiveness of technology-aided document management systems in institutions. The research samples were classified into two groups including the implementing group involving the Registrars/Teaching Personnel and School Heads while the second group is the stakeholder's group involving the learners and the parents. Since there was only one representation for the Registrar and the School Head or there was one assigned for every school, the sampling technique was not applicable for this group. Whereas respondents from this group were the actual people to provide the data as a result, in the assessment of the Two Groups of Respondents of the Technology-Aided Document Management System of the Registrar's Office towards Efficient Student Services, the grand mean computed of 3.64 verbally interpreted as Very Observable. In terms of the assessment of the respondents of the technology-aided document management system of the registrar's office, it resulted in a grand mean of 3.67 verbally interpreted as Very Effective. On the Test of Significant Difference in the Assessment of the Two Groups of Respondents of the document management system of the registrar's office, the average computed t-value of 6.6303 was higher than the tabular value of 2.2281. led to the rejection of null hypothesis, and that there is a Significant Difference in the Assessment of the Two Groups of Respondents based on the above-mentioned variables. Regarding the test of Significant effectiveness in the use of technology-aided document or record management systems in the office of the registrar, the average computed t-value of 4.3675 was higher than the tabular value of 2.3060 led to the rejection of null hypothesis, and that, there is a Significant Difference in the Assessment of the Two Groups of Respondents. As recommended, keep track of the practices that are in place for an efficient student service; Continuously apply effective record keeping practices in the technology-aided document management system; Regular monitoring, checking, and evaluation should be done to address issues abruptly, that is needed to attend to by the concerned; Always observe all the variables that need to be addressed by all those who are concerned in the Registrar's office for effective school record keeping.

Keywords: registrar's office, technology-aided document management system

Introduction

The students' successful learning experience primarily depends on the academic delivery and educational programs implemented by institutions as part of their main task in the public service under the educational sector. However, in public service in the academe, all aspects of services rendered should be reasonably considered including all administrative offices. While teachers in classrooms are responsible for student growth, administrative offices take charge of the governance of resources and public affairs. in the context of the Philippine government, the highest ethical standards are embodied in Republic Act No. 6713 otherwise known as the Code of Conduct and Ethical Standards for Public Officials and Employees. It embodies eight (8) norms of conduct including professionalism, commitment to the public interest, justness and sincerity, political neutrality, responsiveness, nationalism and patriotism, democracy commitment, and modesty in living. Demands for the need to improve public service during the COVID 19 pandemic drastically increased. Improvements to the systems of operation in government offices were forced for its operation to continue without compromising the safety of everyone. Whereas new ideas in rendering services have been tested for effectiveness and reliability to comply with the demands in public service amidst pandemics.

Education is one of the highly challenged sectors in the Philippines at this time. As public health safety versus continuous education is debated, the authorities did not stop finding ways for education to continue without compromising public health safety. The academe continued while administrative services strived harder to expose themselves to danger while experimenting with which processes and systems will apply to them. Office of the Registrars served as the frontline of schools in monitoring the enrollment and managing various school records. While its operation has been affected and limited by the global health threat, these offices need to continue their services with their stakeholders at full potential even without face-to-face transactions. Thus, the Office of the Registrar's transactions should remain integrity and confidential while it remains available anytime and anywhere. Office of the Registrars particularly in schools in the City of San Jose del Monte is currently facing never experienced challenges. To cope with these challenges, they need to grab the opportunities that technology can offer and test some innovations which are not only in response to the global threat challenges but as well as the future may demand.

Statement of the Problem

This study aims to determine the effectiveness of using technology in the document or records management system of selected schools in the Division of San Jose Del Monte City. This research sought answers to the following questions:

1. What is the assessment of the respondents of the document management system of the registrar's office integrated with technology in terms of:

      1.1 Confidentiality;

      1.2 Integrity;

      1.3 Availability;

      1.4 Authenticity;

      1.5 Control; and,

      1.6 Utilization?

2. What is the assessment of the respondents of the technology-aided document management system of the registrar's office in terms of

      2.1 Paperless Transactions;

      2.2 Record Repository and Archiving;

      2.3 Communication with Clients; and

      2.4 Risk Management?

3. Is there a significant difference in the assessment of respondents on the document management system of the registrar's office when it is integrated with technology?

4. Is there significant effectiveness in the use of technology-aided document or record management systems in the office of the registrar's function?
5. Based on the results of the study, what record management program can be developed?

METHODS

Research Design

The study used the descriptive method. Descriptive research may be defined as a purposive process of gathering, analyzing, classifying, and tabulating data about prevailing conditions, practices, beliefs, processes, trends, and cause-effect relationships and then making adequate and accurate interpretations of such data with or without the aid of statistical methods (Calderon & Gonzales, 2014).

Research Locale

The study was conducted in selected Public Schools of the Division of San Jose del Monte City. The Division is located in the Southeastern part of Bulacan composed of ten (10) districts. District 1 has seven (7) schools followed by district 9 with six (6) while the rest have five (5) schools each. There was a total of 52 public schools divided into thirty-four (34) elementary and eighteen (18) high schools. In the listed 52 institutions, there were only eight (8) schools with a designated registrar securing plantilla. It includes Minuyan National High School, Kaypian National High School, Paradise Farms National High School, Graceville National High School, Muzon Harmony Hills National High School, Sapang Palay National High School, San Jose Del Monte National High School, and San Jose Del Monte National Trade School. The rest have no registrar, but the position is substituted either by administrative officer or designated teaching personnel as an ancillary function.

Respondents of the Study

The respondents of the study comprised of the designated registrars of Schools with an established Registrar's Office which can be substituted by an Administrative Officer or Administrative Staff functioning as School Registrar or any teaching personnel performing an ancillary function as the school registrar. The School Head or Principals were also be counted as a respondent as the implementing group of Registrar's Office policies. Selected learners and the parents will respond to the stakeholders' group on the services rendered by the office. The respondents provided data that were beneficial in determining the effectiveness of technology-aided document management systems in institutions.

Sampling Technique

The research samples were classified into two groups including the implementing group involving the Registrars and School Heads while the second group is the stakeholder's group involving the learners and the parents. Since there was only one representation for the Registrar and

the School Head or there was one assigned for every school, the sampling technique was not be applicable for this group. Whereas respondents from this group were the actual people to provide the data. However, in the stakeholders' group, purposive sampling was applied. Purposive sampling is determining the target population who will be involved in the study (Calderon & Gonzales, 2014). The stakeholder group involving the learners and parents who get services from the registrar's office was chosen based on their knowledge of the information desired. To emphasize the purposiveness of the sampling, a representation of one (1) teaching personnel and one (1) student per school were applied to get an equal representation for each school or cluster. As a result, there will be a total of four (4) respondents from each school to provide the needed data for the study.

Research Instrument

The study used a survey questionnaire in conducting the research. The questionnaire used was grouped into the implementing group and the stakeholders' group with the same parts. Part 1 is consisted of the registrar's office functions or services rendered to the stakeholders including paperless transactions, record repository and archiving, communication to clients, and risk management. Part 2 is consisted of the characteristics of the technology-aided document or record management system of the registrar's office including confidentiality, integrity, availability, authenticity, control, and utilization. The questionnaire was composed of three (3) questions for every determinant of each variable to ensure the conciseness of the data provided where the instrument will be provided or administered to the respondents through an online form. On the other hand, a printed questionnaire was also provided depending on the respondent's convenience without compromising minimum health standards. Before disseminating the questionnaire, a validation process was conducted to assess the correctness of the questionnaire and ensured that each question corresponds to the needed data of the study. The validation was administered to local authorities in the Division Office to be able to obtain the best questionnaire validation results. A separate validation was also conducted on a teacher and parents randomly. To ensure reliability, the researcher attempted to attain a Cronbach Alpha between .71 to .95 which is the acceptable percentage to attain the most reliable and consistent data gathering instrument.

Data Gathering Procedure

The researcher first wrote a letter to the City School Division of San Jose Del Monte City through the School Head of the researcher requesting to conduct the study. A validated questionnaire must also be presented before the approval of the research. Once approved, the researcher will secure a Division Memorandum from the Schools Division Superintendent, Assistant Schools Division Superintendent, and be honored by the Director of the Research Division. This process is a required procedure when conducting research within the division as part of the ethical standards, proper documentation, and future publication. Once a Division Memorandum is issued, the researcher started the distribution of the data gathering instrument. Questionnaires had disclosure of the privacy of the information provided by the respondents where the researcher informs the respondents that all responses shall be kept private, and secured and personal information is not compromised. After all the questionnaires were filled by the respondents, results were sorted, tallied, tabulated, and analyzed with the help of a statistician using a manual statistical computation method or with the aid of IBM SPSS Statistics Version 25 and above computer application.

Statistical Treatment of Data

After administering and retrieving the accomplished questionnaire, data were statistically treated. To interpret the data from the responses according to the desired objectives, the researcher used the following statistical treatment in determining the effectiveness of using the technology-aided document management system of registrar offices:

1. Percentage (%): This is the ratio of the frequency of responses (*f*) and the total number of respondents (*n*) multiplied by 100%. To get the proportion of the responses to the respondents, the percentage is used.

2. Weighted Mean: This measured the central tendency to provide the average rating of the respondents from a certain criterion or item in the research instrument. The weighted mean can be obtained by getting the sum of the product of the ratings and frequency divided by the number of respondents.Thus, the weighted mean was used to answer problems 1 and 2 regarding the respondents' responses to the document/record functions of the registrar's office and the use of a technology-aided document/record management system.

3. Ranking. This illustrates the topmost items in the questionnaire evaluated by the respondents favorably which may indicate strength among other indicators. It also shows the items that are least favorable showing weak indicators. Hence, the ranking was used to rank the weighted means obtained as a result of data analysis in problems 2 and 3.

RESULTS AND DISCUSSION

Assessment of the Respondents of the Document Management System of the Registrar's Office Integrated with Technology

Table 1. Assessment of the Respondents of the Document

Management System of the Registrar's Office Integrated with

Technology in terms of Confidentiality

A. Confidentiality	SCHOOL PERSONNEL		STAKEHO DERS		TOTAL	
	WM	VI	WM	VI	WM	VI
1. Online transactions in the Registrar Office have exclusiveness between parties.	3.48	O	3.84	VE	3.55	VE
2. Complaints regarding transmittal and retrieval were handled accordingly.	3.56	VO	3.81	VE	3.61	VE
3. Communication were used and transactions were not compromised by any unauthorized person.	3.63	VO	3.84	VE	3.67	VE

4. Transactions are not shared to any unauthorized person.	3.64	VO	3.94	VE	3.70	VE
5. The Registrar office do not allow transactions to non-authorized person unless there is direct authorization from the requesting party.	3.68	VO	3.90	VE	3.73	VE
6. The registrar office does not ask any personal security information of the requesting party such as passwords and pin of email addresses.	3.69	VO	3.77	VE	3.71	VE
7. The office of the registrar explains that any disclosed information shall be kept secret even when transaction is done.	3.70	VO	3.81	VE	3.72	VE
Total	**3.63**	**VO**	**3.84**	**VE**	**3.67**	**VE**

Table 1 presents the Assessment of the Respondents of the Document Management System of the Registrar's Office Integrated with Technology in terms of Confidentiality. The school personnel-respondents rated confidentiality in item 7 or The office of the registrar explains that any disclosed information shall be kept secret even when transaction is done with the highest weighted mean of 3.70 Followed by item 6 or The registrar office does not ask any personal security information of the requesting party such as passwords and pin of email addresses with the computed mean of 3.69 and third was item 5 or The Registrar office do not allow transactions to non-authorized person unless there is direct authorization from the requesting party with computed mean of 3.68 and all interpreted as Very observable. The stakeholder-respondents rated item 4 or Transactions are not shared to any unauthorized person with the highest weighted mean of 3.94; followed by item 5 with the computed mean of 3.90 and the third, item 1 or Online transactions in the Registrar Office have exclusiveness between parties.and 3 or Communication were used and transactions were not compromised by any unauthorized person with the weighted mean of 3.84 all interpreted as Very effective. In the combined rating, item 5 rated the highest with 3.73 computed mean followed by item 7 or The office of the registrar explains that any disclosed information shall be kept secret even when transaction is done with computed mean of 3.72 and the third is item 6 with computed mean of 3.71, all interpreted as Very effective. As implied, confidentiality is a practical information security process that is beneficial, particularly in informational flows and protection against information security threats (Konev, 2020). From the obtained guide by the UK National Archives, similar to availability of information, the term Digital Continuity is highlighted as the ability to use organizational information in the way you need and for as long as you need. When digital continuity is not practiced, information can easily become unstable and compromised. Whereas the digital continuity concept highly affects changes in the organization through management processes and technology. Information should be managed carefully over time through change to maintain the usability you need. Managing risks under digital continuity protects the information of the Offices and enable accountable, transparent, legal,

and efficient operation. To make risk management operations to the Office, its applicability will depend on how risk management is practiced through: (1) Design of Work; (2) Risk Assessment; (3) Making Action Plans to Treat Risk; (4) Monitoring and Review (UK National Archieves, 2017).

Table 2. Assessment of the Respondents of the Document

Management System of the Registrar's Office Integrated with

Technology in terms of Integrity

B. Integrity	SCHOOL PERSONNEL		STAKEHO DERS		TOTAL	
	WM	VI	WM	WM	VI	WM
1. Records electronically transferred were not altered either maliciously and accidentally.	3.69	VO	3.84	VO	3.72	VE
2. Data contents of records are well maintained in its correct state during transactions.	3.73	VO	3.84	VO	3.75	VE
3. Records were not breached and is digitally transferred to stakeholders or clients with completeness.	3.64	VO	3.87	VO	3.69	VE
4. Clients were notified if there are data needed to be corrected specially in the student's personal information.	3.70	VO	3.94	VO	3.75	VE
5.Transferred documents are malware-free and virus-free.	3.55	VO	3.84	VO	3.61	VE
6.Clients were informed if there are errors or data that requires immediate attention for correction.	3.68	VO	3.84	VO	3.71	VE
7.Permanent records were kept at its original state	3.68	VO	3.87	VO	3.72	VE
Total	**3.67**	**VO**	**3.86**	**VO**	**3.71**	**VE**

Table 2 presents the Assessment of the Respondents of the Document Management System of the Registrar's Office Integrated with Technology in terms of Integrity. The school personnel-respondents rated integrity in item 2 or Data contents of records are well maintained in its correct state during transactions with the highest weighted mean of 3.73; followed by item 4 or Clients were notified if there are data needed to be corrected specially in the student's personal information with the computed mean of 3.70 and third was item 1 or Records electronically transferred were not altered

either maliciously and accidentally with computed mean of 3.69 and all interpreted as Vey observable. The stakeholder-respondents rated item 4 or Clients were notified if there are data needed to be corrected specially in the student's personal information with the highest weighted mean of 3.94; followed by item 3 or Records were not breached and is digitally transferred to stakeholders or clients with completeness and 7 or Permanent records were kept at its original state both with the computed mean of 3.87, all interpreted as Very observable. In the combined rating, item 2 or Data contents of records are well maintained in its correct state during transactions and 4 rated the highest with 3.75 computed mean followed by item 1 and 7 with computed mean of 3.72, all interpreted as Very effective. As implied, data is an important asset of an institution not only used for operational purposes but also utilized for analysis, control, and strategic decision-making. To maximize the effectiveness, mechanisms related to security must be developed to ensure the data integrity of the institution (DSU, 2020). While data quality is becoming a pressing issue for many institutions like struggling to extract timely, consistent, and accurate information, examining the data integrity is more likely to become a common task. Whereas, the importance of the Data Integrity Team or personnel will perform the operational task of maintaining data integrity (McGuire et al, 2017).

Table 3. Assessment of the Respondents of the Document Management System of the Registrar's Office Integrated with Technology in terms of Availability

C. Availability	SCHOOL PERSONNEL		STAKEHOLDERS		TOTAL	
	WM	VI	WM	VI	WM	VI
1.Aside from physical records, Office of the Registrar can provide electronic records for distant transactions.	3.54	VO	3.74	VO	3.58	VE
2.Records/Documents are electronically available anytime when needed or requested.	3.36	O	3.77	VO	3.44	E
3.Internet connectivity is always available to facilitate online transactions of records in Registrar Offices.	3.40	O	3.77	VO	3.48	E
4.Copy of records can be requested anytime.	3.53	VO	3.71	VO	3.57	VE
5.The offices never deny requests of clients if requests are made.	3.63	VO	3.77	VO	3.66	VE
6.The offices have physical infrastructure like computers, printers, etc. in order to provide requested documents immediately.	3.73	VO	3.77	VO	3.74	VE
7.Internet connectivity is available in registrar offices to check if there are email requests of clients.	3.63	VO	3.74	VO	3.65	VE
Total	3.55	VO	3.76	VO	3.59	VE

Table 3 presents the Assessment of the Respondents of the Document Management System of the Registrar's Office Integrated with Technology in terms of Availability. The school personnel-respondents rated availability in item 6 or The offices have physical infrastructure like computers, printers, etc. in order to provide requested documents immediately with the highest weighted mean of 3.73; followed by item 5 or The offices never deny requests of clients if requests are made and

item 7 or Internet connectivity is available in registrar offices to check if there are email requests of clients both with the computed mean of 3.63 and all interpreted as Vey observable. The stakeholder-respondents rated items 2 or Records/Documents are electronically available anytime when needed or requested, 3 or Internet connectivity is always available to facilitate online transactions of records in Registrar Offices, and 5 and 6 all with the highest weighted mean of 3.77; all interpreted as Very observable. In the combined rating, item 6 rated the highest with 3.74 computed mean followed by item 5 with computed mean of 3.66 and item 7 with computed mean of 3.65, all interpreted as Very effective. As implied in demands in modernizing services of the offices, Crampton introduced Modern Risk Management in reducing losses because of non-transparency of information. As emphasized that records are vital to risk management, records can be used to prove compliance as well as affect office decisions. Risk management has an impact on the overall operation of any office particularly those involved in the management of informational resources (Crampton, 2021). Availability cannot be isolated but must be considered as a primary wall of the information system related to school assets including hardware and software facilities, organizational processes, personnel, and the information as well (Suhail Qadir, 2018).

Table 4. Assessment of the Respondents of the Document Management System of the Registrar's Office Integrated with

Technology in terms of Authenticity

D. Authenticity	SCHOOL PERSONNEL		STAKEHOLDE RS		TOTAL	
	WM	VI	WM	VI	WM	VI
1.Requesting party or recipient do not have any access to records unless authorized by the Office of the Registrar.	3.57	VO	3.81	VO	3.62	VO
2.Request of records via email are assessed and checked by the Registrar to ensure that transaction is considered valid.	3.64	VO	3.81	VO	3.68	VO
3.Data received/transmitted remains authentic after transactions were made.	3.67	VO	3.81	VO	3.70	VO
4.Data on the provided documents were always real and legitimate.	3.68	VO	3.84	VO	3.72	VO
5.The office uses its official email address or school email when communicating and transacting with clients electronically.	3.72	VO	3.87	VO	3.75	VO
6.Official Seals or Electronic Seals were used to certify documents' authenticity.	3.73	VO	3.77	VO	3.74	VO
7.Requests and transactions were recorded and logged for future validations.	3.67	VO	3.81	VO	3.70	VO
Total	**3.67**	**VO**	**3.82**	**VO**	**3.70**	**VO**

Table 4 presents the Assessment of the Respondents of the Document Management System of the Registrar's Office Integrated with Technology in terms of Authenticity.

The school personnel-respondents rated authenticity in item 6 or Official Seals or Electronic Seals were used to certify documents' authenticity with the highest weighted mean of 3.73; followed by item 5 or The office uses its official email address or school email when communicating and transacting with clients electronically with weighted mean of 3.72 and third, item 4 or Data on the provided documents were always real and legitimate with the computed mean of 3.68 and all interpreted as Vey observable.

The stakeholder-respondents rated item 5 with 3.87 as computed mean being the highest, followed by item 4 with computed mean of 3.84, and items 1 or Requesting party or recipient do not have any access to records unless authorized by the Office of the Registrar., item 2 or Request of records via email are assessed and checked by the Registrar to ensure that transaction is considered valid, item 3 or Data received/transmitted remains authentic after transactions were made and item 7 or Requests and transactions were recorded and logged for future validations all with the highest weighted mean of 3.77; being the third with the computed mean of 3.81 all interpreted as Very observable.

In the combined rating, item 5 were rated the highest with 3.75 computed mean followed by item 6 with computed mean of 3.74 and item 4 with computed mean of 3.72, all interpreted as Very effective.

As implied, authenticity refers to the assurance that the exchange of information is from the source it claims to be from which involves proof of identity (Pender-Bay, 2016). An example of authenticity means includes user and passwords; Public Key Infrastructure Authentication (PKI); Single Sign-On; Secure Socket Layers. Authenticity tends to ensure that users and sources are accessing with correctness because it is "authentic".

Table 5. Assessment of the Respondents of the Document Management System of the Registrar's Office Integrated with

Technology in terms of Control/Possession

E. Control/Possession	SCHOOL PERSONNEL		STAKEHOLDERS		TOTAL	
	WM	VI	WM	VI	WM	VI
1.Data/Record is regularly checked and maintained by an information technology personnel as part of the maintenance procedure in protecting records in the Registrar's Office.	3.37	O	3.84	VO	3.46	O
2Records remains in the Control/Possession of the Registrar Office while transactions (specifically outgoing records) are not yet complete or acknowledged by the recipient.	3.60	VO	3.81	VO	3.64	VO
3.Records/Documents were intact and free from any damages when transferred.	3.62	VO	3.81	VO	3.66	VO
4.Electronic or digital copies of documents are still available for requests even transfer of documents were already done.	3.46	O	3.81	VO	3.53	VO
5.The office informs the clients that when permanent records were transferred, its possession of the student's data will be fully transferred to the recipients	3.51	O	3.87	VO	3.58	VO

	WM	VI	WM	VI	WM	VI
6.The registrar office reports to the recipients or clients when transactions or transfer of records are done.	3.53	VO	3.84	VO	3.59	VO
7.Clients or recipient signs to a logbook when transactions or transfer of records were done.	3.70	VO	3.74	VO	3.71	VO
Total	**3.54**	**VO**	**3.82**	**VO**	**3.60**	**VO**

Table 5 presents the Assessment of the Respondents of the Document Management System of the Registrar's Office Integrated with Technology in terms of Control/Possession. The school personnel-respondents rated control/possession in item 7 or Clients or recipient signs to a logbook when transactions or transfer of records were done with the highest weighted mean of 3.70; followed by item 3 or Records/Documents were intact and free from any damages when transferred with weighted mean of 3.62 and third, item 2 or Records remains in the Control/Possession of the Registrar Office while transactions (specifically outgoing records) are not yet complete or acknowledged by the recipient with the computed mean of 3.60 and all interpreted as Vey observable. The stakeholder-respondents rated item 5 with 3.87 as computed mean being the highest, followed by item 1 or Data/Record is regularly checked and maintained by an information technology personnel as part of the maintenance procedure in protecting records in the Registrar's Office and item 6 both with computed mean of 3.84 all interpreted as Very observable. In the combined rating, item 7 were rated the highest with 3.71 computed mean followed by item 3 with computed mean of 3.66 and item 2 being the third with computed mean of 3.64, all interpreted as Very effective. As implied, Parker defined possession as a state of having in or taking into one's control or holding at one's disposal; actual physical control of property by one who holds for himself, as distinguished from custody; something owned or controlled (Pender-Bay, 2016). The possession factor, in a security context, is a category of user authentication credentials based on items that the user has with them, typically referring to any hardware device or physical devices used to store important school data (Wigmore, 2020). Adams also compiled Donn Parker's CIA Triad ideas and further explained that possession also refers to information under the control of the possessor but not necessarily available for use by the possessor. Only the person in control of the physical facilities containing the information therein is accessible in the content. Thus, this practice aims to prevent alterations of contents even by data owners unless managed by the person-in-charge of the data (Adams, 2018).

Table 6. Assessment of the Respondents of the Document Management System of the Registrar's Office Integrated with
        Technology in terms of Utilization

F. Utilization	SCHOOL PERSONNEL		STAKEHOLD ERS		TOTAL	
	WM	VI	WM	VI	WM	VI
1.Records/Documents transmitted/received via technology-aided like email transactions to ensure registrar services are served according to its usefulness.	3.59	VO	3.81	VO	3.64	VO

2.Transmitted/received records were logged and recorded as transactions successfully made in Registrar's Office.	3.64	VO	3.81	VO	3.68	VO
3.Data/Records were practically used according to other valuable uses such as research, verifications, school demography and statistics.	3.53	VO	3.77	VO	3.58	VO
4.When records were released, the office allows the recipients to fill up evaluation of services or the office of the registrar.	3.36	O	3.71	VO	3.43	O
5.The status of student records was shared to the recipients to keep recipient updated to the status of requested documents.	3.44	O	3.77	VO	3.51	O
6.Recipients were informed about the status of requests either electronically (email), instant messages (SMS) or personally.	3.49	O	3.71	VO	3.54	VO
7.Recipients were informed if student information will be used for some other important matters aside from record requests and transfers.	3.53	VO	3.77	VO	3.58	VO
Total	**3.51**	**VO**	**3.76**	**VO**	**3.56**	**VO**

Table 6 presents the Assessment of the Respondents of the Document Management System of the Registrar's Office Integrated with Technology in terms of Utilization. The school personnel-respondents rated utilization in item 2 or Transmitted/received records were logged and recorded as transactions successfully made in Registrar's Office with the highest weighted mean of 3.64; followed by item 1 or Records/Documents transmitted/received via technology-aided like email transactions to ensure registrar services are served according to its usefulness with weighted mean of 3.59 and third, item 3 or Data/Records were practically used according to other valuable uses such as research, verifications, school demography and statistics with the computed mean of 3.53 and all interpreted as Vey observable. The stakeholder-respondents rated item 1 and 2 with 3.81 as computed mean being the highest, followed by items 3, 7 and item 5 or The status of student records was shared to the recipients to keep recipient updated to the status of requested documents all with computed mean of 3.77 all interpreted as Very observable and the on the third, items 4 or When records were released, the office allows the recipients to fill up evaluation of services or the office of the registrar and 6 or Recipients were informed about the status of requests either electronically (email), instant messages (SMS) or personally both with computed mean of 3.71 and interpreted as Very observable. In the combined rating, item 2 was rated the highest with 3.68 computed mean followed by item 1 with computed mean of 3.64 and item 3 being the third with computed mean of 3.58, all interpreted as Very effective. As implied, Pender-Bay explicated Parker's definition of Utility as the usefulness of data whereas it is the fundamental component of the Parkerian Hexad. It focuses on a much-overlooked concept when it comes to data. The data relating to the other five of the six PH components (confidentiality, integrity, availability, authenticity, possession/control), is based on its state of usefulness. The utility is often confused or assumed with availability but the two are distinct. The utility is also the only principle in the Hexad that is not binary but degrees in utility have varieties depending on the data format (Andress, 2014).

Table 7. Summary of the Assessment of the Respondents of the Document Management System of the Registrar's Office

Integrated with Technology

VARIABLES	SCHOOL PERSONNEL		STAKEHOLDERS		TOTAL	
	WM	VI	WM	VI	WM	VI
1.Confidentiality	3.63	VO	3.84	VO	3.67	VO
2. Integrity	3.67	VO	3.86	VO	3.71	VO
3. Availability	3.55	VO	3.76	VO	3.59	VO
4. Authenticity	3.67	VO	3.82	VO	3.70	VO
5. Control	3.54	VO	3.82	VO	3.60	VO
6. Utilization	3.51	VO	3.76	VO	3.56	VO
TOTAL	**3.59**	**VO**	**3.81**	**VO**	**3.64**	**VO**

Table 7 shows the summary of the assessment of the Two Groups of Respondents of the Technology-Aided Document Management System of the Registrar's Office towards Efficient Student Services. From the school personnel-respondents, item 2 on Integrity and 4 on Authenticity ranked first both with 3.67 computed mean followed by item 1on Confidentiality with computed mean of 3.63 interpreted as Very observable on this assessment. The grand mean received a score of 3.59 interpreted as Very observable. With regard to the summary of the assessment of the stakeholder-respondents, item 2 on Integrity ranked first with 3.86 computed mean followed by item 1 Confidentiality with obtained mean of 3.84, and on the third, items 4 on Authenticity and 5 on Control which garnered a total mean of 3.82 both interpreted as Very observable. As a summary, it resulted with a grand mean of 3.81 verbally interpreted as Very observable. In this manner, as reflected, item 2 on Integrity ranked 1 garnering 3.71 verbally interpreted as Very observable among the top three variables. This is followed by item 4 Authenticity being the next in rank with a computed mean of 3.37 interpreted as Very observable, while item 1 on Confidentiality ranked last with a mean of 3.67 interpreted as Very observable. As a summary, it resulted with a grand mean of 3.64 verbally interpreted as Very Observable.

Assessment of the Respondents of the Technology-aided Document Management System of the Registrar's Office

Table 8. Assessment of the respondents of the technology-aid document management system of the registrar's office in terms of Paperless Transactions

A. Paperless Transactions	SCHOOL PERSONNEL		STAKEHOLDERS		TOTAL	
	WM	VI	WM	WM	VI	WM
1. Promotes paperless transactions during work from a home scenario in response to the new normal and minimum health requirements.	3.49	E	3.87	VE	3.57	VE
2. Minimization of direct office transactions was introduced to clients for a more convenient transaction.	3.50	E	3.81	VE	3.56	VE
3. Endorses downloading of files from the school's cloud drive.	3.47	E	3.81	VE	3.54	VE
4. Encourages recipients to transact to official school email.	3.41	E	3.90	VE	3.51	E
5. The registrar's office promotes the visiting official school website in obtaining information about procedures in requesting records.	3.50	E	3.81	VE	3.56	VE
6. The registrar's office promotes visiting and communicating the school's official social media page in requesting information about procedures in requesting records.	3.49	E	3.84	VE	3.56	VE
7. Encourages recipients to transact via call for direct verifications of electronic requests.	3.55	VE	3.81	VE	3.60	VE
Total	**3.49**	**E**	**3.83**		**3.56**	**VE**

Table 8 shows the assessment of the Assessment of the Two Groups of Respondents of the Technology-aided   Document Management System of the Registrar's Office in terms of Paperless Transactions. On the assessment by school personnel-respondents, item 7 garnered the highest computed mean of 3.55, verbally interpreted as Very effective. Item 4 registered the lowest computed mean of 3.41 verbally interpreted as Effective. From this assessment by the first group of respondents, the average mean computed of 3.49 or interpreted as Effective was achieved. On the assessment by the stakeholder-respondents, item 4 garnered the highest computed mean of 3.90 interpreted as Effective, Items 1.2, 1.3, 1.5 and 1.7 registered the lowest computed mean of 3.81 verbally interpreted as Very effective. From this assessment, the computed average mean of 3.83 or interpreted as Very effective was attained. From the combined assessment, item 1.7 gained the highest mean collected of 3.60; and item 1.4 received the lowest mean computed of 3.51, both verbally interpreted as Very

effective. The overall mean computed of 3.56, interpreted as Vey effective indicates that the two groups of respondents were on the same assessment of accepting the technology-aided document management system of the registrar's office in terms of Paperless Transactions. As implied, in the Philippines, a study on emerging roles in registrar offices was made after the recorded strongest typhoon *Haiyan* locally known as *Yolanda* in November 2013. Caluza (2017), assessed the heavily affected Registrar Offices because most documents were scattered and deteriorated while utilizing an embedded single case study using thematic analysis in identifying the issues and coping strategies of participants through in-depth interviews. The result revealed various issues coping strategies as described by the sources from a limited storage area to difficulty in document retrieval and monitoring up to the utilization of logbooks to misclassification of records. The study becomes the basis for developing the Electronic Document Achieve and Management Systems (EDAMS), a system used to produce a systematic record system of schools in response to uncertainties caused by calamities.

Table 9. Assessment of the respondents of the technology-aided document management system of the registrar's office in terms   of Record Repository and Archiving

B. Record Repository and Archiving	SCHOOL PERSONNEL		STAKEHOL DERS		TOTAL	
	WM	VI	WM	VI	WM	VI
1. Use of combined hardcopy and softcopy of school documents is practiced in all means of transactions	3.63	VE	3.87	VE	3.68	VE
2. Practice of file/document organization is implemented specially in ensuring the proper record repository and archiving.	3.65	VE	3.84	VE	3.69	VE
3. Providing of sufficient physical facilities for storages to store records and documents.	3.66	VE	3.87	VE	3.70	VE
4. Records were located in an adequate well-ventilated and well-illuminated room.	3.60	VE	3.87	VE	3.66	VE
5. Records were located in an adequate building or location.	3.68	VE	3.81	VE	3.71	VE
6. Records were organized in an orderly manner.	3.65	VE	3.94	VE	3.71	VE
7. The school uses large size email storage or cloud facility to store student records.	3.43	E	3.90	VE	3.52	VE
Total	**3.61**	**VE**	**3.87**	**VE**	**3.67**	**VE**

Table 9 shows the assessment of the Assessment of the Two Groups of Respondents of the technology-aided document management system of the registrar's office in terms of Record Repository and Archiving.

On the assessment by the school personnel-respondents, item 5 garnered the highest computed mean of 3.68, verbally interpreted as Very effective. Item 7 garnered the lowest computed mean of 3.43 verbally interpreted as Effective. From this assessment by the first group of respondents, the average mean computed of 3.61 or interpreted as Very Effective was achieved. On the assessment by the stakeholder-respondents, item 5 garnered the highest computed mean of 3.94, verbally interpreted as Very Effective. Item 5 garnered the lowest computer mean of 3.81, verbally interpreted as Very Effective. From this assessment, the computed average mean of 3.87 or interpreted as Very Effective was attained.From the combined assessment, items 5 and 6 gained the highest mean collected of 3.71 interpreted as Very Effective; while item 7 received the lowest mean computed of 3.52, verbally interpreted as Very effective. The overall mean computed of 3.67, interpreted as Very effective indicates that the two groups of respondents were on the same assessment of accepting the technology-aided document management system of the registrar's office in terms of Record Repository and Archiving. As implied, Rowe (2016-2018) studied the increasing use of Archiving Utilities and other digital preservation in a wide variety of institutions in pursuit of preventing the struggle of preservation of digital records. It is also expected that more and more universities will move to implement the transfer of digital records into a long-term institutional records management program. This will beneficially address the gaps in records to create authenticity, reliability, and trustworthy evidence of school records (Rowe, 2016-2018). Record repository and archiving are now practicable into a digital preservation format. It will provide the ability to take preservation by preservation plans that require scalable and flexible infrastructure having a core premise of storage preservation and enabling multiple copies of files across different storage media and architectures combined with the hard copies of records (Johnston, 2020).

Table 10. Assessment of the respondents of the technology-aided document management system of the registrar's office in terms of Communication with Clients

C. Communication with Clients	SCHOOL PERSONNEL		STAKEHOLDERS		TOTAL	
	WM	VI	WM	VI	WM	VI
1. Communication to clients made successful transactions.	3.68	VE	3.90	VE	3.73	VE
2. Communication is done according to service orientation with utmost responsibility.	3.67	VE	3.84	VE	3.70	VE
3. Inquiry concerns were addressed accordingly.	3.68	VE	3.90	VE	3.73	VE
4. Personnel were accommodating in informing clients about transactions.	3.71	VE	3.87	VE	3.74	VE

5. Personnel were courteous and listens carefully to client concerns.	3.73	VE	3.87	VE	3.75	VE
6. Protocols and procedures in requesting records were informed before proceeding with the transactions.	3.69	VE	3.81	VE	3.72	VE
7. Client requests were responded as soon it was received.	3.66	VE	3.84	VE	3.70	VE
Total	3.69	**VE**	3.86	**VE**	3.72	**VE**

Table 10 shows the Assessment of the Two Groups of Respondents of the technology-aided document management system of the registrar's office in terms of Communication to Clients.

On the assessment by the school personnel-respondents, item 5 garnered the highest computed mean of 3.73, verbally interpreted as Very Effective, while item 7 gained the lowest computed mean of 3.66, verbally interpreted as Very Effective. From this assessment by the first group of respondents, the average mean computed of 3.69 or interpreted as Very Effective was achieved.

On the assessment by the stakeholder-respondents, items 1 and 3 garnered the highest mean computed of 3.90, verbally interpreted as Very Effective while item 6 received the lowest computed mean of 3.81, verbally interpreted as Very Effective. From this assessment, the computed average mean of 3.86 or interpreted as Very Effective was attained. From the combined assessment, item 5 gained the highest mean collected of 3.75 interpreted as Very Effective while items 2 and 7 received the lowest mean computed of 3.70, verbally interpreted as Very Effective.

The overall mean computed of 3.72, interpreted as Very Effective indicates that the two groups of respondents were on the same assessment of accepting the technology-aided document management system of the registrar's office in terms of Communication to Clients.

As implied, student affairs works including the registrar's office are designed to provide services in an interschool operation. Aside from student transactions, Registrars' Offices collaborate with various departments and external organizations, and offices to provide a continuum of services to students.

Additionally, they also render support services to the overall school community. Within this context, the office is expected to perform multiple roles while balancing its responsibilities and prioritizing what is most crucial as the technology advancement demands. The Registrar's Office must administer rendered service while ensuring accuracy, timeliness, fairness, and responsiveness to all the needs of its stakeholders. Nowadays, Registrars are pressed to utilize technological tools to comply with the community, clientele, and stakeholders' demands in their service (Burden, 2010).

Table 11. Assessment of the respondents of the technology-aided document management system of the registrar's office in terms of Risk Management

D. Risk Management	SCHOOL PERSONNEL		STAKEHOLDERS		TOTAL	
	WM	VI	WM	VI	WM	VI
1. Minimum Health Standards during transactions are were practiced for safety.	3.70	VE	3.84	VE	3.73	VE
2. Risk management of the Registrar Office in securing documents against unauthorized personnel.	3.68	VE	3.84	VE	3.71	VE
3. Physical securities placed in offices to provide protection of records/documents against possible natural calamities	3.64	VE	3.81	VE	3.68	VE
4. Transactions were logged to keep a record of all transactions updated.	3.75	VE	3.90	VE	3.78	VE
5. Document request were only accommodated to requesting person or authorized person only.	3.73	VE	3.87	VE	3.75	VE
6. The school have security personnel guarding the offices and its properties.	3.73	VE	3.84	VE	3.75	VE
7. Personnel in the Registrar office were fully vaccinated in accordance with the health requirements in operating offices amidst pandemic.	3.83	VE	3.94	VE	3.85	VE
Total	**3.72**	**VE**	**3.86**	**VE**	**3.75**	**VE**

Table 11 shows the assessment of the Assessment of the Two Groups of Respondents on the technology-aided document management system of the registrar's office in terms of Risk Management.

As seen on the table, the school personnel-respondents assessed item 7 and garnered the highest computed mean of 3.83, verbally interpreted as Very Effective, while item 3 gained the lowest computed mean of 3.64, verbally interpreted as Very Effective. From this assessment by the first group of respondents, the average mean computed of 3.72 or interpreted as Very Effective was achieved.

On the assessment by the stakeholder-respondents, item 4 garnered the highest mean computed of 3.90, verbally interpreted as Very Effective while item 3 received the lowest computed

mean of 3.81, verbally interpreted as Very Effective. From this assessment, the computed average mean of 3.86 or interpreted as Very Effective was attained.

From the combined assessment, item 7 gained the highest mean collected of 3.85 interpreted as Very Effective while item 3 received the lowest mean computed of 3.68, verbally interpreted as Very Effective. The overall mean computed of 3.75, interpreted as Very Effective indicates that the two groups of respondents were on the same assessment of accepting the technology-aided document management system of the registrar's office in terms of Risk Management.

As implied, Pope (2022) explained that the digitization process in records management may encounter many issues. There will be instances in that data can be inputted incorrectly during file conversions. Physical records can be lost and damaged by any means before digitization is completed. Files can be corrupted if the digital solution hasn't been thoroughly tested. If companies are trying to set up new systems to automate digital record saving, there are opportunities for failure there as well and there are several intricacies that need to be accounted for.

Table 12. Summary of the Assessment of the respondents of the

technology-aided document management system of the

registrar's office

Variables	SCHOOL PERSONNEL		STAKEHOLDERS		TOTAL	
	WM	VI	WM	VI	WM	VI
1. Paperless Transactions	3.49	E	3.83	VE	3.56	VE
2. Record Repository and Archiving	3.61	VE	3.87	VE	3.67	VE
3. Communication with Clients	3.69	VE	3.86	VE	3.72	VE
4. Risk Management	3.72	VE	3.86	VE	3.75	VE
TOTAL	**3.63**	**VE**	**3.86**	**VE**	**3.67**	**VE**

Table 12 shows the summary of the Assessment of the respondents of the technology-aided document management system of the registrar's office.

From the school personnel-respondents, item 4 on Risk Management ranked first with 3.72 computed mean followed by item 3 Communication with Clients with computed mean of 3.69 and in third spot item 2 Record Repository with computed mean of 3.61 interpreted as Very effective. On this assessment the grand mean received a score of 3.63 interpreted as Very effective.

With regard to the summary of the assessment of the stakeholder- respondents, item 2 on Record Repository ranked first with 3.87 computed mean followed by items 3 on Communication with Clients and 4 on Risk Management with obtained mean of 3.86, and on the third, item 1 Paperless

transactions garnered a total mean of 3.83 interpreted as Very Effective. As a summary, it resulted in a grand mean of 3.86 verbally interpreted as Very Effective.

In this manner, as reflected, item 4 on Risk Management ranked 1 garnering 3.75 verbally interpreted as Very effective among the top variable. This is followed by item 3 on Communication with Clients being the next in rank with a computed mean of 3.72 interpreted as Very effective, while item 2 on Record Repository ranked third with a mean of 3.67 interpreted as Very effective and ranking fourth item 1 on Paperless transactions with a mean of 3.56. As a summary, it resulted in a grand mean of 3.67 verbally interpreted as Very Effective.

Table 13. Significant difference in the assessment of respondents of

the document management system of the registrar's office

INDICATORS	t-test Value	Df	Level of Signifance	Critical Value at $\alpha = 0.05$	Decision	Interpretation
1. Confidentiality	5.76095876	12	0.05	2.17881283	Reject Ho	Significant
2. Integrity	7.707858602	12	0.05	2.17881283	Reject Ho	Significant
3. Availability	4.098965122	12	0.05	2.17881283	Reject Ho	Significant
4. Authenticity	6.444130731	12	0.05	2.17881283	Reject Ho	Significant
5. Control	6.223704846	12	0.05	2.17881283	Reject Ho	Significant
6. Utilization	6.556755201	12	0.05	2.17881283	Reject Ho	Significant
TOTAL	**6.630397938**	**10**	**0.05**	**2.228138852**	**Reject Ho**	**Significant**

Table 13 presents the Test of Significant Difference in the Assessment of the Two Groups of Respondents of the document management system of the registrar's office. As presented, in terms of Confidentiality, the computed t-value of 5. 7609 which is higher than the tabular value of 2.1788 led to the rejection of null hypothesis and that there is a significant difference.

In terms of Integrity, the respondents rejected the null hypothesis indicated by the computed t-value of 7.7079 higher than the tabular value of 2.1788 and that there is a significant difference. In terms of Availability, the t-value computed of 4.0989 was higher than the tabular value of 2.1788 led to decision of the rejection of the null hypothesis and that there is a significant difference. In terms of Authenticity, the computed t-value of 6.4441 which is higher than the tabular value of 2.1788 led to the rejection of null hypothesis and that there is a significant difference. In terms of Control, the computed t-value of 6.2237 which is higher than the tabular value of 2.1788 led to the rejection of null hypothesis and that there is a significant difference. In terms of Utilization, the computed t-value of 6.5567 which is higher than the tabular value 2.1788 led to the rejection of null hypothesis and that there is a significant difference. As a sum, the average computed t-value of 6.6303 was higher than the tabular value of 2.2281. led to the rejection of null hypothesis, and that, there is a Significant

Difference in the Assessment of the Two Groups of Respondents based on the above-mentioned variables.

Table 14. Significant effectiveness in the use of technology-aided document or record management systems in the office of the

registrar

Variables	t-test Value	df	Level of Signifance	Critical Value at $\alpha = 0.05$	Decision	Interpretation
1. Paperless Transactions	16.09676642	12	0.05	2.17881283	Reject Ho	Significant
2. Record Repository and Archiving	7.074606034	12	0.05	2.17881283	Reject Ho	Significant
3. Communication with Clients	10.77726178	12	0.05	2.17881283	Reject Ho	Significant
4. Risk Management	5.092845297	12	0.05	2.17881283	Reject Ho	Significant
TOTAL	**4.367571344**	**6**	**0.05**	**2.446911851**	**Reject Ho**	**Significant**

Table 14 presents the Test of Significant effectiveness in the use of technology-aided document or record management systems in the office of the registrar. As presented, in terms of Paperless transaction, the computed t-value of 16.0967 which is higher than the tabular value of 2.1788 led to the rejection of null hypothesis and that there is a significant difference. In terms of Record Repository and Archiving, the respondents rejected the null hypothesis indicated by the computed t-value of 7.0746 higher than the tabular value of 2.1788 and that there is a significant difference. In terms of Communication with Clients, the t-value computed of 10.7772 was higher than the tabular value of 2.1788 led to decision of the rejection of the null hypothesis and that there is a significant difference. In terms of Risk Management, the computed t-value of 5.0928 which is higher than the tabular value of 2.1788 led to the rejection of null hypothesis and that there is a significant difference. As a sum, the average computed t-value of 4.3675 was higher than the tabular value of 2.3060 led to the rejection of null hypothesis, and that, there

is a Significant Difference in the Assessment of the Two Groups of Respondents based on the above-mentioned variables.

CONCLUSIONS

Based from the findings of the study, the following conclusions are hereby drawn:

1. All the variables were rated very effective by both respondents, and Integrity overall ranked first, it can be concluded that the Registrar's office is observing all of them.
2. Paperless Transactions Record Repository and Archiving, Communication to Clients, and Risk Management are effective practices in the technology-aided document management system of the registrar's office.

3. The respondents though differ in their assessments on Confidentiality, Integrity, Availability, Authenticity, Control, and Utilization; these mean that there are issues need to be attended to by the concerned.
4. All the variables presented need to be addressed by all the concerned in the Registrar's office for effective school record keeping.
5. Being not an IT expert, the researcher could have recommended to the Division Office using a computerized scanned copy from the original in releasing the forms via online platforms to the official email account of the receiving schools rather than sending it through couriers. It could also proposed to the School Head to make a program or database system stored all pertinent documents of learners old and new through the help of the respective ICT department.

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