Potrero High School Monitoring System

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Abstract:

   This study aimed to monitor the attendance of faculty members and students of Potrero High School. It aims to develop an efficient and accurate attendance monitoring system. The daily record of faculty members and student's arrival and departure time from the school is maintained. It keeps the records in order and is automatically updated. Monitoring the faculty members and student's daily attendance is done by using RFID technology.

   The proponents conducted different methods of gathering information to satisfy the needs of proposed study and to understand it better. They used random sampling in determining their respondents to share their suggestions and ideas that can be used in the development of the study. The assessment of the respondents on the effectiveness of the system is considered to be acceptable in terms of efficiency, reliability, effectiveness, accuracy and security. The proponents may conclude that the proposed system will meet the objectives being stated and reveals an excellent improvement.

Key words: Monitor; Attendance; RFID

INTRODUCTION

Potrero High School population is growing continuously with almost fifty (50) faculty members and one thousand (1000) students. It is for this reason the researchers proposed an attendance monitoring system. The proposed study is believed to be an asset to the school because it provides the faculty as well as the students the ease and satisfaction in checking daily attendance. It will be able to send message to parents to notify them that their children are within the school premises. Moreover, the school will assure the security of their students.

When most people think of RFID, they think about high security technology – same technology that the government uses for passports and border control; that banks use to identify theft; and the police use to find criminals. Fortunately, the futuristic RFID technology unthinkable in a school environment just a few years ago is now practical and affordable, thus, being used in schools all over the world. (Identimetrics, 2012)

A study done by Mr. Philip Villamin Morajes entitled "iNotified: an SMS and RFID-Based Notification System of Lipa City Colleges, Lipa City, Batangas, Philippines" proved that in the advent of technology, communications becomes faster and easier in a tap of a fingertip. In an academic institution, communication between parents and school is very challenging and an important one. Thus, the researcher conducted this study to help the school solve the problem in monitoring the students' whereabouts.

A study made by Polytechnic University of the Philippines entitled "Attendance monitoring using RFID with SMS Advisory" is use to monitor the students via a scanner that will detect if the RFID card is registered on the database of the school. The function of SMS (Short Message Service) Advisory is to send the information to parents regarding the

time of the arrival and departure of their children in the PUP campus.

The study by Isaac M. Morallo was used to create an electronic attendance and logging system using Radio Frequency Identification (RFID) and Short Messaging Service (SMS) with a web-based management system portal that allows user to access real time data to ensure campus security and smart information management. The students will use RFID card system to check in and out of the main entrance, to both track attendance and log time and prevent unauthorized entrance therefore utilize the RFID technology.

As the proponents analyzed the existing studies on attendance monitoring, the proposed study for Potrero High School aims for the enhancement by displaying the accurate schedule and room assignments of faculties and students.

METHODS

In order for the proponents to effectively develop a monitoring system, respondents of the study were randomly selected from ninety (90) grade 7 students and ten (10) faculty members of Potrero High School who have the knowledge on the process of the daily manual checking of their attendance. The proponents used different research instruments such as questionnaire, interview, and observation to acquire reliable and accurate information. Data collected from respondents were analyzed using simple weighted mean statistical tool.

RESULTS

Table 1 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the accuracy of the existing system in terms of generating time-in/time-out of faculty and students. With the computed **average weighted mean of 2.45**, the respondents found the

accuracy of the existing system for the information dissemination as **Inaccurate.**

Table 1: Assessment of the Faculty on the Accuracy of the Existing System

Aspect	5 SA	4 A	3 U	2 D	1 SD	WV	WM	DR
Generates accurate time-in/time-out.	0 (0)	1 (4)	3 (9)	4 (8)	2 (2)	10 (23)	2.30	Inaccurate
Has no error in time entries of faculty and students.	0 (0)	1 (4)	3 (9)	4 (8)	2 (2)	10 (23)	2.30	Inaccurate
Avoids bias, time-theft and other time tracking problems.	0 (0)	2 (8)	5 (15)	2 (4)	1 (1)	10 (28)	2.80	Uncertain
Provides accurate schedule and room assignments of faculty and students.	0 (0)	1 (4)	3 (9)	5 (10)	1 (1)	10 (24)	2.40	Inaccurate
Average Weighted Mean							2.45	Inaccurate

Table 2 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the accuracy of the proposed system in terms of generating time-in/time-out of faculty and students. With the computed **average weighted mean of 3.93**, the respondents found the accuracy of the proposed system for the information dissemination as **Accurate.**

Table 2: Assessment of the Faculty on the Accuracy of the Proposed System

Aspect	5 SA	4 A	3 U	2 D	1 SD	WV	WM	DR
Generates accurate time-in/time-out.	5 (25)	3 (12)	2 (6)	0 (0)	0 (0)	10 (43)	4.30	Accurate
Has no error in time entries of faculty and students.	3 (15)	5 (20)	1 (3)	1 (2)	0 (0)	10 (40)	4.00	Accurate
Avoids bias, time-theft and other time tracking problems.	2 (10)	4 (16)	2 (6)	2 (4)	0 (0)	10 (36)	3.60	Accurate
Provides accurate schedule and room assignments of faculty and students.	3 (15)	3 (12)	3 (9)	1 (2)	0 (0)	10 (38)	3.80	Accurate
Average Weighted Mean							3.93	Accurate

Table 3 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the security of the existing system in terms of securing the records of faculty and students. With the computed **average weighted mean of 2.80,** the respondents found the security of the existing system for the information dissemination as **Uncertain.**

Table 3: Assessment of the Faculty on the Security of the Existing System

Aspect	5	4	3	2	1	WV	WM	DR
	SA	A	U	D	SD			
Secures the attendance records of faculty and students.	0 (0)	2 (8)	4 (12)	3 (6)	1 (1)	10 (27)	2.70	Uncertain
Attendance records are not prone to alteration.	0 (0)	3 (12)	3 (9)	4 (8)	0 (0)	10 (29)	2.90	Uncertain
Attendance records of faculty and students are not misplaced.	0 (0)	2 (8)	5 (15)	2 (4)	1 (1)	10 (28)	2.80	Uncertain
Average Weighted Mean							2.80	Uncertain

Table 4 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the security of the proposed system in terms of securing the records of faculty and students. With the computed **average weighted mean of 2.8,** the respondents found the security of the proposed system for the information dissemination as **Secured.**Thus**,** the records of the teachers and students are secure.

Table 4: Assessment of the Faculty on the Security of the Proposed System

Aspect	5	4	3	2	1	WV	WM	DR
	SA	A	U	D	SD			
Secures the attendance records of faculty and students.	5 (25)	2 (8)	3 (9)	0 (0)	0 (0)	10 (42)	4.20	Secured
Attendance records are not prone to alteration.	4 (20)	3 (12)	3 (9)	0 (0)	0 (0)	10 (41)	4.10	Secured
Attendance records of faculty and students are not misplaced.	2 (10)	2 (8)	5 (15)	1 (2)	0 (0)	10 (35)	3.50	Uncertain
Average Weighted Mean							3.93	Secured

Table 5 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the efficiency of the existing system in terms of monitoring the attendance of faculty and students. With the computed **average weighted mean of 2.40**, the respondents found the efficiency of the existing system for the information dissemination as **Inefficient.**

Table 5: Assessment of the Faculty on the Efficiency of the Existing System

Aspect	5	4	3	2	1	WV	WM	DR
	SA	A	U	D	SD			
Using DTR/class records to check the daily attendance of faculty consumes less time.	0 (0)	1 (4)	3 (9)	5 (10)	1 (1)	10 (24)	2.40	Inefficient
Convenient in browsing and viewing the faculty and students' records.	0 (0)	0 (0)	5 (15)	3 (6)	2 (2)	10 (23)	2.30	Inefficient
Efficient in providing schedule and room assignments of faculty and students.	0 (0)	2 (8)	3 (9)	4 (8)	1 (1)	10 (26)	2.60	Uncertain
Average Weighted Mean							2.40	Inefficient

Table 6 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the efficiency of the proposed system in terms of monitoring the

attendance of faculty and students. With the computed **average weighted mean of 4.07**, the respondents found the efficiency of the proposed system for the information dissemination as **Efficient.**Hence, the researcher conducted a system development study which is considered a new technology which helped the school to solve the problem in monitoring the students' whereabouts. - (P. Mojares, Litan, and J. Mojares, 2013)

Table 6: Assessment of the Faculty on the Efficiency of the Proposed System

Aspect	5	4	3	2	1	WV	WM	DR
	SA	A	U	D	SD			
Using DTR/class records to check the daily attendance of faculty consumes less time.	3 (15)	1 (4)	3 (9)	3 (6)	0 (0)	10 (34)	3.40	Uncertain
Convenient in browsing and viewing the faculty and students' records.	4 (20)	4 (16)	2 (6)	0 (0)	0 (0)	10 (42)	4.20	Efficient
Efficient in providing schedule and room assignments of faculty and students.	6 (30)	4 (16)	0 (0)	0 (0)	0 (0)	10 (46)	4.60	Very Efficient
Average Weighted Mean							4.07	Efficient

Table 7 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the accuracy of the existing system in terms of generating time-in/time-out of faculty and students. With the computed **average weighted mean of 2.68**, the respondents found the accuracy of the existing system for the information dissemination as **Uncertain.**

Table 7: Assessment of the Student on the Accuracy of the Existing System

Aspect	5 SA	4 A	3 U	2 D	1 SD	WV	WM	DR
Generates accurate time-in/time-out.	9 (45)	7 (28)	37 (111)	26 (52)	11 (11)	90 (247)	2.70	Uncertain
Has no error in time entries of faculty and students.	8 (40)	10 (40)	27 (81)	36 (72)	9 (9)	90 (242)	2.70	Uncertain
Avoids bias, time-theft and other time tracking problems.	10 (50)	5 (20)	33 (99)	27 (54)	15 (15)	90 (238)	2.60	Uncertain
Provides accurate schedule and room assignments of faculty and students.	7 (35)	9 (36)	38 (114)	23 (46)	13 (13)	90 (244)	2.70	Uncertain
Average Weighted Mean							2.68	Uncertain

Table 8 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the accuracy of the proposed system in terms of generating time-in/time-out of faculty and students. With the computed **average weighted mean of 3.86**, the respondents found the accuracy of the proposed system for the information dissemination as **Accurate.**

Table 8: Assessment of the Student on the Accuracy of the Proposed System

Aspect	5 SA	4 A	3 U	2 D	1 SD	WV	WM	DR
Generates accurate time-in/time-out.	45 (225)	45 (180)	0 (0)	0 (0)	0 (0)	90 (405)	4.05	Accurate
Has no error in time entries of faculty and students.	45 (225)	45 (180)	0 (0)	0 (0)	0 (0)	90 (405)	4.05	Uncertain
Avoids bias, time-theft and other time tracking problems.	40 (200)	40 (160)	10 (30)	0 (0)	0 (0)	90 (390)	3.90	Accurate
Provides accurate schedule and room assignments of faculty and students.	30 (150)	32 (128)	8 (24)	20 (40)	0 (0)	90 (342)	3.42	Uncertain
Average Weighted Mean							3.86	Accurate

Table 9 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the security of the existing system in terms of securing the records of faculty and students. With the computed **average weighted mean of 2.47,** the respondents found the security of the existing system for the information dissemination as **Unsecured.**

Table 9: Assessment of the Student on the Security of the Existing System

Aspect	5	4	3	2	1	WV	WM	DR
	SA	A	U	D	SD			
Secures the attendance records of faculty and students.	6 (30)	12 (48)	31 (93)	30 (60)	11 (11)	90 (242)	2.7	Secured
Attendance records are not prone to alteration.	1 (5)	5 (20)	29 (87)	41 (82)	14 (14)	90 (208)	2.3	Unsecured
Attendance records of faculty and students are not misplaced.	5 (25)	7 (28)	29 (87)	28 (56)	21 (21)	90 (217)	2.4	Unsecured
Average Weighted Mean							2.47	Unsecured

Table 10 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the security of the proposed system in terms of securing the records of faculty and students. With the computed **average weighted mean of 3.65,** the respondents found the security of the proposed system for the information dissemination as **Secured.**It implies the records of the students are safe.

Table 10: Assessment of the Student on the Security of the Proposed System

Aspect	5	4	3	2	1	WV	WM	DR
	SA	A	U	D	SD			
Secures the attendance records of faculty and students.	35 (175)	35 (140)	20 (60)	0 (0)	0 (0)	90 (375)	3.75	Secured
Attendance records are not prone to alteration.	30 (150)	30 (120)	30 (90)	0 (0)	0 (0)	90 (360)	3.60	Secured
Attendance records of faculty and students are not misplaced.	30 (150)	30 (120)	30 (90)	0 (0)	0 (0)	90 (360)	3.60	Secured
Average Weighted Mean							3.65	Secured

Table 11 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the efficiency of the existing system in terms of monitoring the attendance of faculty and students. With the computed **average weighted mean of 2.57**, the respondents found the efficiency of the existing system for the information dissemination as **Uncertain.**

Table 11: Assessment of the Student on the Efficiency of the Existing System

Aspect	5 SA	4 A	3 U	2 D	1 SD	WV	WM	DR
Using DTR/class records to check the daily attendance of faculty consumes less time.	10 (50)	6 (24)	35 (105)	30 (60)	9 (9)	90 (248)	2.8	Uncertain
Convenient in browsing and viewing the faculty and students' records.	0 (0)	8 (32)	32 (96)	42 (82)	8 (8)	90 (220)	2.4	Inefficient
Efficient in providing schedule and room assignments of faculty and students.	5 (25)	6 (24)	32 (96)	34 (68)	13 (13)	90 (226)	2.5	Uncertain
Average Weighted Mean							2.57	Uncertain

Table 12 shows the frequency distribution, weighted mean and the descriptive rating of the assessment of the respondents on the efficiency of the proposed system in terms of monitoring the attendance of faculty and students. With the computed **average weighted mean of 3.79**, the respondents found the efficiency of the proposed system for the information dissemination as **Efficient.**

Table 12: Assessment of the Student on the Efficiency of the Proposed System

Aspect	5	4	3	2	1	WV	WM	DR
	SA	A	U	D	SD			
Using DTR/class records to check the daily attendance of faculty consumes less time.	20 (100)	40 (160)	30 (90)	0 (60)	0 (9)	90 (350)	3.50	Uncertain
Convenient in browsing and viewing the faculty and students' records.	45 (225)	40 (160)	5 (15)	0 (0)	0 (0)	90 (400)	4.00	Efficient
Efficient in providing schedule and room assignments of faculty and students.	33 (165)	50 (200)	7 (21)	0 (0)	0 (0)	90 (386)	3.86	Efficient
Average Weighted Mean							3.79	Efficient

DISCUSSION

Based on the results and findings of the study, there is still improvement needed to the existing system of the Potrero High School in monitoring of their daily attendance. An attendance monitoring system using RFID technology can be a potential alternative or solution to the problem.

Potrero High School needs a system that will instantly record the attendance of the faculty and students. The proponents believe that the findings in this study contribute significantly to the school and to the parents of the students.

The proposed system will heighten the school monitoring attendance services quality that will satisfy each student, including the faculty. It will be a great help for the students and faculty to ensure that their attendance is monitored effectively, efficiently and accurately.

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