



Republic of the Philippines
Department of Education
REGION IV-A CALABARZON
CITY SCHOOLS DIVISION OF BIÑAN CITY

PROJECT SCAN (SECURED CLASS ATTENDANCE NETWORK): AN OFFLINE MONITORING SYSTEM FOR STUDENTS' TIME-IN AND TIME-OUT



RONALD D. ROMERO

Member



DARWIN E. CLUTARIO

Lead Proponent



JEROME E. CASILAO

Member

Biñan City Senior High School-Timbaño Campus

ABSTRACT

Although attendance is not part of the grading system, teachers are still checking and monitoring it because it has an impact on the overall performance and even behavior of the learners. Similar to the situation of other schools, Biñan City Senior High School-Timbaño Campus has an issue with the attendance of the learners. In some cases, some learners are leaving the school earlier than their regular end of classes.

Through this issue and the concern of the researchers, they have thought of making the checking of attendance digital, innovative, secure, and can be monitored easily through Project SCAN (Secured Class Attendance Network): An Offline Monitoring System for Students' Time-In and Time-Out. The participants of this study were thirty-one (31) students, two (2) security personnel, and seven (7) teachers of BCSHS-Timbaño Campus. Informed Consent and Assent Forms were provided to them. They tried to experience and explore Project SCAN, then evaluated it the rated its acceptability level.

It was shown in the results of the study that the mean rating of 4.23 demonstrates that the participants agreed based on their evaluation of their experience in using Project SCAN. Also, the mean rating of 4.57 revealed that the participants accepted the project because of its usability, accuracy, convenience, accessibility, and speed. Thus, the researchers recommended that the school may adopt Project SCAN and funding should be provided to achieve further improvement of the system and process of the project.

Keywords: attendance network, offline monitoring system, scan, time-in, and time-out

INTRODUCTION

Undeniably, most public schools have problems with students who are always late for their classes. Likewise, some have a problem with students who leave their classes early, and most of the time, they leave the school without the permission of their teachers. In some cases, students leave the school premises to buy food at nearby stores near the school. Alegre (2018) reported that some students escaped from the school by climbing the school fence to buy food because they did not like the food in the school canteen. Although there are some instances in which the students were allowed to go home due to valid reasons such as being sick or urgent family calls, it is still alarming when students go outside the school without their parents. If something terrible happens to them, schools may be reliable, especially when there is no proper documentation of the time-in and time-out of the students.

In five years of the implementation of the Senior High School (SHS) program, it was evident that the students have different numbers of subjects per semester. Hence, in some schools, the students have different schedules. Also, some schools are overpopulated, resulting in shifting schedules. In Biñan City Senior High School-Timbaño Campus, there are two buildings situated, but only one building is being used for the students of the school. The other building is currently used for the other school nearby. Thus, the security guards had difficulty distinguishing the students leaving the school until both school managers instructed the security guard on duty to ask the students individually. Sometimes, the class advisers directly instruct and inform the guard on duty that their class advisories are done with their classes and allowed to leave the school premises. However, these practices are now consistent, and the school still encounters a few cases where the students intentionally leave the school premises without the knowledge of their advisers. Although they are allowed to go home already since they do not have classes, the school is eager to at least take note of the students who left the school premise so that in case there will be incidents that something terrible

happens to them, the school will not be liable since they are out of the school premise already. Through proper documentation and process, the school aims to manage the students' time-in and time-out better.

As the schools embraced technological advancement, enormous innovations arose and were executed amidst the pandemic. Biñan City Senior High School-Timbaño Campus was granted permission to conduct limited face-to-face classes during the 2nd semester of SY 2021-2022. Part of the school's response to ensure the students' safety was the creation of the contactless scanning of their student's identification cards or IDs through QR codes. Santiago (2022) affirms that QR or "Quick Response" can be used to share information and has high data security. Aside from the fact that students can be safe through this innovation, the school can also determine whether the students entered the school premises and have good body temperatures. Due to the positive feedback that the school personnel gave from the easy scanning of ID and the issue of the students leaving the school without the students' permission and proper documentation of their time-out, the researchers ought to create and conduct this study.

Based on the researchers' observations of the current situation and the possible opportunity to create good management of the students' time-in and time-out, that may also serve as the basis for class attendance. By creating an offline monitoring system, class advisers and subject teachers can easily determine the absentees in the class. They can also identify the students who came late to school and class. Moreover, the teachers can also distinguish whether the students attend the class or just go to the school and roam around. In conducting the Project SCAN or Secured Class Attendance Network, the researchers expect possible flaws and improvements. Hence, in this study, the acceptability of Project SCAN was assessed and evaluated through its execution, particularly the system itself and the experience of the students, teachers, and security personnel.

This study aimed to develop an offline monitoring system for students' time-in and

time-out through Project SCAN or Secured Class Attendance Network and test its acceptability level among the Biñan City Senior High School-Timbaño Campus students, teachers, and security personnel. Specifically, it seeks to answer the following questions:

1. How may the participants evaluate project SCAN (Secured Class Attendance Network): an offline monitoring system for students' time-in and time-out, in terms of the following:

- 1.1 Convenience;
- 1.2 Speed;
- 1.3 Accessibility;
- 1.4 Accuracy; and
- 1.5 Usability?

2. What is the level of acceptability of the improved version of project SCAN (Secured Class Attendance Network): an offline monitoring system for students' time-in and time-out in terms of the following:

- 2.1 Accessibility;
- 2.2 Speed;
- 2.3 Convenience;
- 2.4 Accuracy; and
- 2.5 Usability?

3. What are the implications and suggestions of the participants during and after the implementation of Project SCAN?

This action research created and implemented an offline monitoring system for students' time-in and time-out through Project SCAN (Secured Class Attendance Network). This made accessing and monitoring class attendance easy and convenient for regular checking. After conducting this study, school administrators/managers may adopt the offline system to track the students' time-in and time-out, and attendance.

METHODOLOGY

Quantitative data analysis was executed in this study. The evaluation and assessment of the participants towards the acceptability of the offline attendance monitoring were collected, analyzed, and interpreted accordingly. The descriptive statistics and observations of the researchers also helped them to reveal the progress of the

implementation. Lastly, after analyzing the results, they looked for the implications, conclusions, and recommendations before disseminating the detailed results of the study to readers.

Generally, the participants of this study were the students, security personnel, and teachers at the school. The students served as participants since they were the ones who needed to scan their IDs daily. Next, the security personnel served as participants because they were the ones who checked the details of the students and monitored if the system was functioning well. Then, the teachers were the ones who accessed the offline system to see the list of the students who scanned their IDs and monitored their attendance daily. All of the participants answered the surveys for both evaluation and determining the acceptability level of the Project SCAN.

The class adviser and subject teachers of Grade 12 – Electrical Installation and Maintenance (EIM) served as the respondents in this study. A total of seven (7) teachers served as the respondents. Also, since the two (2) security personnel were part of accessing and checking the system of Project SCAN, the researcher decided to include them in evaluating the project and serve as participants. Likewise, the thirty-one (31) students from the Grade 12 EIM were the subjects of monitoring since they all have the new version of ID that has a QR code at the back and also served as respondents. In total, there were forty (40) participants in this study.

In this study, the researchers crafted a survey questionnaire that would evaluate Project SCAN in terms of accessibility, speed, convenience, accuracy, and usability. Each factor was evaluated through a Likert scale:

Evaluation

- 5 - Strongly Agree
- 4 - Agree
- 3 - Somewhat Agree or Disagree
- 2 - Disagree
- 1 - Strongly Disagree

Acceptability Level

- 5 - Acceptable
- 4 - Slightly Acceptable
- 3 - Somewhat Acceptable or Unacceptable

2 - Slightly unacceptable

1 - Unacceptable

Mainly, data analysis was attained through the use of the descriptive quantitative method. In this study, frequency, percentage distribution, and mean or average were used. The implications were determined as well through descriptive analysis.

RESULTS

Evaluation of the Participants towards Project SCAN

Table 1 presents the evaluation of the participants towards Project SCAN based on the five criteria presented. It can be gleaned from the table below that none of the participants evaluated the Project SCAN and their experience in using it two (2) or one (1). Among the five criteria, Speed has the lowest rating of 3.85, which also pertains to the observation of the researchers and feedback of the participants that it creates a queue when they fall in line for scanning. The highest rating is 4.56 for the Usability of Project SCAN, which means that it serves the purpose of the project and is useful for the participants. Next was Accessibility which had a 4.33 rating, then Convenience with a 4.26 rating, and Accuracy which was 4.15. Overall, the participants agreed that Project SCAN can be utilized further.

Criteria	5	4	3	2	1	Rating
1. Convenience <i>I can use the system with little effort or no difficulty anytime and anywhere within the school.</i>	15	21	4	0	0	4.26
2. Speed <i>The system provides easy and fast processes, operations, and transactions for checking attendance.</i>	6	22	12	0	0	3.85
3. Accessibility <i>I can access the system easily by scanning (students), checking (security personnel and teachers), and monitoring (teachers) attendance.</i>	20	13	7	0	0	4.33
4. Accuracy <i>The project provides correct or precise data and information.</i>	14	18	8	0	0	4.15
5. Usability <i>The project provides effectiveness and efficiency in checking attendance.</i>	24	14	2	0	0	4.56
Mean						4.23

* 5 - Strongly Agree, 4 - Agree, 3 - Somewhat Agree or Disagree, 2 - Disagree, 1 - Strongly Disagree

Level of Acceptability of Project SCAN

Table 2 shows the level of acceptability of Project SCAN as rated by the participants of this study. Similar to the evaluation of the participants, the criterion that got the highest acceptability rating is Usability with a rating of 4.83. Next, with a rating of 4.65 is the Accuracy, then the Convenience with a rating

of 4.53. These three criteria were interpreted as Acceptable. Then, the Accessibility which has a 4.48 rating, and Speed with 4.38 were interpreted as Slightly Acceptable. Overall, the Project SCAN was rated with 4.57 which means it is Acceptable by the participants. Likewise, the results also revealed that Project SCAN has been accepted and can be adapted by the school and teachers to check and monitor the attendance of the students.

Table 2
Level of Acceptability of Project SCAN

Criteria	5	4	3	2	1	Rating
1. Convenience <i>The system can be used with little effort or no difficulty anytime and anywhere within the school.</i>	25	11	4	0	0	4.53
2. Speed <i>The system can be used to provide easy and fast processes, operations, and transactions for checking attendance.</i>	22	11	7	0	0	4.38
3. Accessibility <i>The system can be accessed easily by scanning (students), checking (security personnel and teachers), and monitoring (teachers) attendance.</i>	21	17	2	0	0	4.48
4. Accuracy <i>The system can be used to provide correct or precise data and information.</i>	28	10	2	0	0	4.65
5. Usability <i>The project can be used to provide effective and efficient record in checking attendance.</i>	35	3	2	0	0	4.83
Mean						4.57

* 5 - Acceptable, 4 - Slightly Acceptable, 3 - Somewhat Acceptable or Unacceptable, 2 - Slightly unacceptable, 1 - Unacceptable

Implications of Project SCAN and the Suggestions of the Participants

During the implementation of Project SCAN, the researchers noted various implications as well as suggestions from the participants. First, the students are not aware that when they scan or place their IDs in front of the camera for a period of time, their records will show that they have logged in twice or they will be logged out already. Only the security personnel confirmed whether they had successfully scanned their IDs. However, in some cases, the security personnel was not around in the guard house because she was also doing utility work. Hence, the researchers informed the participants, particularly the students, that when they saw the green light in the camera blinked, meaning they had scanned their IDs already. The researchers are aiming to also buy a speaker that will provide a sound once the students successfully scan their IDs.

The most common concern of the participants, which was also noted by the researchers through observation and feedback, Project SCAN creates a long queue when the students fall in line to scan their IDs. With this concern, the researchers look

forward to once the school adopts Project SCAN, a guard house will be constructed, and more available desktops and cameras will be used to avoid long queues when the students fall in line to scan their IDs for attendance. Likewise, as suggested by the security personnel, additional monitors should be used so that the students will see on their own whether they have successfully scanned their IDs or not. A simple confirmation would be enough with the time when they have scanned their IDs.

Based on the experiences of the teachers in using Project SCAN, they do not have any concerns about the offline system when they access the attendance monitoring system. They are even eager to implement it for the succeeding months and years. However, they also realize the situation of the guard house in which the queuing is a big problem when the school implements Project SCAN for all the students, teaching and non-teaching personnel, and even visitors. Thus, they are hoping the stakeholders will support the school in terms of funding.

DISCUSSION

Primarily, the objectives of this research were achieved through the responses of the participants. Likewise, the purpose of Project SCAN was evident. However, due to limited funds and resources, some of the processes were not improved. Despite this concern, the researchers are still aiming to use Project SCAN in the future, whether within or outside the school.

It was shown in the results of the study that the mean rating of 4.23 shows that the participants agreed based on their evaluation of their experience in using Project SCAN. Also, the mean rating of 4.57 revealed that the participants accepted the project because of its usability, accuracy, convenience, accessibility, and speed.

Based on the findings of this study, the researchers concluded that the Project SCAN is Acceptable to be used as an Offline Monitoring System for Students' Time-In and Time-Out to check the attendance of the students. It was revealed that the participants of this study agreed and accepted the project based on the five criteria, which are usability,

accuracy, convenience, accessibility, and speed. Although there were notable suggestions lifted, the researchers tried to solve some issues that were attainable on their end. However, some suggestions were not entertained because they did not have the means to provide the requests of the participants, such as additional desktops, cameras, monitors, and even speakers.

After attaining the objectives of this study, the following recommendations are proposed:

1. The school may consider the results of the study and support the teacher-researchers in implementing Project SCAN for the succeeding months or next school year.

2. Funding, whether from the school or stakeholders, must be sought to fully implement Project SCAN and avoid long queues when scanning IDs.

3. Other schools and offices may adopt Project SCAN to easily check their attendance and to have accurate time-in and time-out records.

ACKNOWLEDGEMENTS

The researchers express their gratitude to the Research Committee of the City Schools Division of Biñan City for their approval of this research and to the Local Government Unit of Biñan City for the support and financial assistance on the conduct of the study.

REFERENCES

Alegre, B. (2018). Ilang estudyante, nag-oo ber da bakod tuwing break time. MA News and Public Affairs. <https://www.youtube.com/watch?v=oVghUog9odY>

Patel, A. et al. (2019). Smart Student Attendance System Using QR Code. 2nd International Conference on Advances in Science & Technology (ICAST-2019) K. J. Somaiya Institute of Engineering & Information Technology, University of Mumbai, Maharashtra, India. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3370769

Rahmawati D. et al. (2019). Student Attendance System using QR Codes (Case Study: Institut Teknologi Telkom Surabaya). Proceedings of the International Seminar on Information and Communication Technologies 2019. <https://jurnal.ittelkom-sby.ac.id/isict2019/article/view/64>

Santiago, CJ. (2022). What Is a QR Code? How to Scan and How to Make Your Own. G2. <https://learn.g2.com/qr-code>