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Online Purchasing with SMS Payment: A tool in monitoring student purchases

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Abstract: ***School canteens are an integral part of the school environment and an ideal site for a healthy eating experience. Nonetheless, healthy meals can be difficult to implement when the canteen is not provided within the school system. The aim of this study was to develop and support the institutions especially in the process of canteen management and sales. The paper describes a system that helps workers control the productivity of the canteen and, at the same time, recognizes the importance of school and home relationships in child monitoring.***

This provides internet access to parents that enables them to monitor the purchasing profile of their children in the school canteen. The study was used the developmental method of research using the SDLC with the following steps: analysis, design, implementation and maintenance of the system.

The proposed system to be put into effect, an analysis of the standard process and procedures needed to be carried out. After that, data were collected, analyzed and reviewed extensively to meet the goals. Identified components for the device, necessary outputs, inputs, interfaces and processes. Based on data interpretation, the parent respondents claimed there should be a way for them to monitor the eating habits and spending of their children. The respondents believed and accepted that the new system can help make canteen transactions more convenient for parents, students and staff at the canteen.

Keywords: component; formatting; eating habit; canteen; online purchasing; SMS; SDLC; internet.

I. INTRODUCTION

The prepared settings plays an important role in providing adequate learning for the children in a school set-up. Parents visit various schools during admission period specifically to learn about the school academic program in order to see the school environment and its facilities. The prepared setting apart from the curriculum is one of the great influencing factors that made parents whether to keep their children's in a specific school or otherwise. During enrolment one of the most visited places in the school is the canteen. Most people were very aware of the possible health concern. Parents are worried about what kind of food their children's eat in school.

Camp Tinio National High School is a Junior and Senior high level public school. It has services including medical clinic, laboratories, recreational areas and school canteen.

The canteen is situated on the ground near Junior high school and serves students of Junior and Senior high school. It offers breakfast, lunch, and snacks for meals.The amount of breakfast meal is between 25 - 35 pesos, lunch is between 40 -55 pesos and snacks are between 15 - 30 pesos. The canteen can accommodate about 100 students, with four canteen staff helping each other accommodate transactions. One staff acts as the cashier, the one is incharge of getting orders for food while the other two

are involved in preparing food. In the food area, the students have to lineup and direct their order to the staff incharge. Once they have already received their order, they proceed to the condiments area, and finally to the payment cashier.

There are a total of 3000 Junior and Senior high school students at Camp Tinio National School, with such a large number of students who cannot avoid inconvenience. Long line of students are mostly encountered in the canteen. The idea is, students have to remain on line for awhile waiting for accommodation for their turn. There are also cases in which consumers inadvertently obtain incorrect amount of change for their order. On the other hand, most of the parents are simply too busy to check and ask about their children's school spending. On the canteen staff part, concerns are faced about the lack of smaller bills and coins, difficulty in handling jobs such as: updating documents, recording sales and product inventory. The parents will be able to monitor the spending and eating habits of their children's through online access. They can give their children's allowance via SMS as well. The proposed system is conceive to solve the above mentioned problem.

Objective of the Study

The study is focused in providing an online purchasing with sms payment for Camp Tinio National High School. The following questions were addressed in the study:

1. How do the respondent be described in terms of:
   - 1.1 All respondents
     - 1.1.1 Educational attainment
     - 1.1.2 Technology awareness
   - 1.2 Parents
     - 1.2.1 Income Profile
     - 1.2.2 Health awareness
2. How do parents perceived the impact of having an online canteen transaction to enable them to monitor their children's purchases in school?
3. How do the respondents evaluate the present manual processing of canteen transaction in terms of:
   - 3.1 Speed
   - 3.2 Accuracy
   - 3.3 Accessibility
4. How do the canteen staff evaluate the proposed system in generating reports and sales transaction in terms of:
   - 4.1 Speed
   - 4.2 Accuracy
   - 4.3 Accessibility

II. METHODOLOGY

RESEARCH DESIGN

The study made used of descriptive methods. It was used to gather information about the current and existing process in the canteen of the locale. The method was employed to gather necessary information and data that were vital to further understanding and investigation. The researcher made used of this method through the aid of questionnaires.

The said research methodology was used because it is the most appropriate in providing the information needed in the course of this undertaking. It is a fact-finding methodology that provides adequate and accurate information necessary in the interpretation of data. The proponent decided to use the descriptive research method in order to gather pertinent information in the development of the proposed system.

RESEARCH INSTRUMENT

The researcher used this methods data gathering tools so as to know the reaction of the respondents on their current manual canteen process and on the proposed system of the researcher. The primary data were obtained from the result of the questionnaires and observation. The secondary data were taken from the research available through the internet and evaluations of similar applications being employed by several education institutions.

The questionnaire consists of different types. The questionnaire for the parents, canteen staff, faculty and students buyers contain question on the assessment of the manual canteen process and statements of the parent's perception on the proposed canteen system.

QUESTIONNAIRE

This method was used to get the perception of the different respondents, survey questionnaire were furnished as a tool in finding answers to related and important matter to support the conduct and development of the study.

The first set of questionnaire was intended for student respondents. This was to enable the researcher to understand the impact of the present manual processing of canteen transaction to the student respondent.

The second set of questionnaire was made to assess the evaluation made by the canteen personnel for the proposed system.

The third set of questionnaire was for the parent respondents. This was made to understand the perception of the parents on the impact of having an online canteen transaction.

These questionnaire were distributed to the specified respondent of the locale. Answer from these questionnaires were tabulated using the frequency and percentage as basis for interpretation.

STATISTICAL PROCEDURES

Statistical tools are used for statistical analysis of research data. It is the most precise objective procedure to analyze and interpret the results of the study.

To determine the effectiveness of the instruments utilized, this study made use of the following statistical procedures.

1. **Slovin's formula in getting the sample size**. The researcher use the formula in getting the sample size. The formula is as follows:

$$n = \frac{N}{1 + Ne^2}$$

Where: n = a sample size

N = population size

E = desired margin of error

Example:

$n = (1387/(1+1192*.055^2))$

$n = 301$

2. **Frequency Distribution**. Tabulation of scores showing the number of individuals occurred at each class interval arranged from highest to lowest or vice versa.

3. **Percentage**. It was used as a descriptive statistics to describe the relationship of a pair variables with respect to the whole. The general formula is as follows:

$$\mathbf{P} = \frac{F}{N} \times 100$$

Where: P = percentage

F = frequency

N = Total number of respondents

System Development Life Cycle (SDLC)

System development involves several phases into which specific course of action are to be performed and accomplished. In this study, the researcher followed the standard steps of System Development Life Cycle. The different phases are as follows:

Planning Phase. This phase dealt with the initiation of the study, it was used to define the problem and addressed it. The methods were also determined under this phase and the probable solution for the problem.

The researcher determined the problems on the canteen of CTNHS which the proposed system could solve. These problem are:

1. The problem of the buyers in waiting for a long line transaction.
2. The problem of the canteen staff in giving exact change.
3. How will the parents gain assurance that their children eat the right kind of food?

Analysis Phase. This phase dealt with the gathering of data. Data were gathered based from the identified problem in the previous phase. All necessary and pertinent data were analyzed and thoroughly evaluated to meet the objectives.

Based on the information and the data gathered through observation interviews, and questionnaires, the researcher's analysis had led to the following objectives.

Design Phase. In this phase, the researcher identified the software components specifying relation among components, software structure, maintaining a record of design decisions and providing blue print for the implementation. Methods were used in determining an accurate design applicable for the solution of the problem. During this phase, the researcher identified the necessary output, inputs, interfaces and processes.

Development Phase. In this phase, all designs determined in the previous phase were used in the actual creation of the system. Specified hardware and software were also put into implementation. The design were converted to codes and programs based from what the researcher has studied and analyze during this phase, researcher coded and record the system.

Testing Phase. This the most crucial phase in SDLC. It was used to test the validity and accuracy of the newly developed system in giving out the expected information. Several tests were conducted such as:

1. ***Unit Testing.*** Under the first stage, the system is tested by modules or functions individually to detect errors and faults. The researcher had found some errors but made solution to fix the errors.
2. ***Integration Testing.*** On the second stage, the system was tested while each module was combined with other modules to form the whole system. In this test, the researcher successfully combined all the modules.

3. ***System Testing.*** On the last stage of testing. The system was tested and ran a whole. To further correct errors and faults, the researcher had successfully tested the system is now ready for implementation.

Implementation Phase. This phase is the actual delivery of the developed system wherein it is implemented, all components are put together to assure its effectiveness and accuracy. The system was implemented with the software specified and hardware requirements without errors. The researcher had been successful in implementing the system.

Maintenance Phase. In the last phase of SDLC, the system will be evaluated after implementation. The newly develop system will run in parallel with the present system to evaluate and determine if the new systems met its objectives.

In this phase the system developer is providing support for any changes or revisions that the user may require sustaining the online canteen system. If and when the system will be implemented the researcher is willing to provide assistance.

III. Result and Discussion

VALUATION OF STUDENT RESPONDENTS ON THE MANUAL TRANSACTION

Presented in Table 1 are the level of internet awareness of the student respondents. About 259 or 86.05% are capable of creating their own e-mail account, 15 or 4.98% know how to surf on the internet, 15 or 4.98% can create their own websites and 12 or 3.99% have no idea on internet.

Majority of the student respondents can surf and create their own account on the internet. This means that if there will be a computerized system developed in the canteen, the student can easily follow instructions since most of them have knowledge in computer operations.

Table 1. Technology Awareness of the Student Respondents

Internet Awareness	**Frequency**	**Percentage**
No idea in internet	12	3.99%
Can surf on the internet	15	4.98%
Can create own e-mail account	259	86.05%
Can create own website	15	4.98%
Total	**301**	**100%**

Evaluation of the Canteen Personnel to the Proposed System

Presented in Table 8 are the levels of internet awareness of the canteen personnel. Out of the total number of 18 personnel, 10 or 55.55% are capable of creating their own e-mail account while 6 or 33.33% know how to surf on the internet and only 2 or 11.12% do not have an idea on operating a computer. This shows that majority of the canteen personnel are knowledgeable in operating computer; hence, if there will be a computerized system developed in the canteen, the personnel can easily follow the instructions.

Table 8. Technology awareness of the canteen personnel

Technology Awareness	**Frequency**	**Percentage**
No Idea	2	11.12%
Can surf on the internet	6	33.33%
Can create own e-mail account	10	55.55%
Can create own website	0	0%
Total	**18**	**100%**

EVALUATION OF PARENTS TO THE PROPOSED SYSTEM

Presented in Table 14, are the level of internet awareness of the parent respondents. About 76 or 25.25% falls under the level 2 who are capable of sending and receiving SMS and MMS messaging from one cellphone to another. 170 or 56.48% falls under level 3 who know how to create their e-mail account and visit social network regularly, 51 or 16.94% falls on level 4 who can create their own websites and do online transaction and 4 or 1.33% do not have an idea on the internet. Majority of the

parent respondent can surf and create their own account on the internet manage sending and receiving online messaging transactions. This means that if there will be a computerized system developed in the canteen, the parents can easily follow instruction since most of them have knowledge in computer operation.

Table 14. Technology awareness of the parent respondents

Answer	Frequency	Percentage
Level 1		1.33%
1. No idea about the internet	4	
Level 2		25.25%
2. Has mobile phone		
3. Can transfer and receive message through SMS (Short Message Service) and MMS (Multi-Media Sending)	76	
Level 3		54.48%
4. Can surf on the internet	32	
5. Can create own e-mail account	52	
6. Has account on Facebook etc.	86	
Level 4		16.94%
7. Can do online transaction	18	
8. Can purchase product online	16	
9. Can create own website	17	94.44%
Total	**301**	**100%**

IV. Conclusion

Based on the interpretation of data, parent respondents believed that there should be a means for them to track their children's eating habit and spending. Majority of the students and canteen staff agreed that their is a need for the institution to have an additional tool in managing the transaction in the school canteen. The respondents believed and agreed that the proposed system will aid in making canteen transactions more convenient for parents, students and canteen staff.

The school should implement the proposed system as will provide a better way of handling canteen transactions and thus, (a) Provides convenience to the students, (b) Important information to parents, (c) More productivity time for canteen personnel. A seminar and a specific module regarding the proposed system features and use should be provided for both parents and canteen personnel so they will be properly guided. Further study should be conducted that will include the library transaction including its available stocks, inventory and sales report. Since the proposed system uses database that contain canteen information. It must be updated regularly to keep the information accurate and timely. Follow up study should be conducted to determine the impact of the system on the improvement of the canteen transactions and school partnership for the cause of the children.

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