LA SALLE UNIVERSITY
(Formerly ICC- La Salle)

Lasallian Research Forum

Foreword

Not quite a time that our institution has become a university. With the new status, the institution is faced with responsibility of producing new knowledge that hoped to help develop a better nation through generating excellence in educating and giving service to others.

It is a pride on our part to share with you the fruits of our faculty members' labors in helping the institution carry out its mission of producing youth for excellence and service. The articles found in this journal are done to enhance and upgrade the services La Salle University is offering. An improved enrollment system was designed for our clients and staff to experience the comfort of passing through the smooth and fast enrolment procedures. A journal on the transformation of LSU's Co-curricular program gives everyone the imagery of how devoted the De La Salle brothers are in assuring that our clients get numerous benefits during their stay with us. The property assessment in Binuni was primarily commissioned to the property's feasibility of helping attain excellence in the Agri-business program. The study on the health problems of the residents in Sitio Opol, oin the other hand, created a strong ally between the institution and its adopted barangay.

The pictures in the front cover feature the different activities taken by the researchers while they were on the phase of gathering data. They were tailored to mark the Lasallian Research Forum Vol.12 No. 2 issue.

The editorial board wishes to continue our research undertaking by providing you more on our next issue. Lastly, we would like to acknowledge the contributors of this issue for their untiring support for without them this publication would never be a reality.

Dr. REZYL R. MALLORCA
Institutional Research Director

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A client-server enrollment system of La Salle University

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Abstract

The enrollment system developed in 1990 is unable to meet the growing demands of La Salle University; hence, the need to re-engineer and introduce modifications. This project began in summer 2004 and has been fully operational since academic year 2005-2006. The process involved four stages: first-hand interviews with end-users, studies on programming tools and storage facilities, system analyses and design, and a real-time testing and code debugging.

1. Introduction

Automation has been the priority solution to a complex problem for most institutions. It is purposely designed to maximize efficiency, convenience, and quality of services offered.

Today, technological advancement reveals promising opportunities for programmers and system developers. The quest for ultimate automation to realize its main objective will never cease as long as information and communication technology exist.

The evolution of the enrollment system dates back from the time when enrollment forms are primarily used to the most modern convenience using applied computer technology. With its period of existence and with the advancements of the kind of hardware to use and tools to develop, the enrollment system has gone a long way in terms of reliability and efficiency. The goal to come up a user-friendly and convenient system triggers the idea of developing a more powerful and dynamic system.

Adopting the so-called system doubles the potential of acquiring a highly advance access to quality and efficient enrollment system in a

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flexible and user-friendly software environment. This is a fact that prompted the researchers to venture in this study. It is phenomenal step leading to the vision of innovating, a vital tool necessary to survive in the ever demanding world of information technology (Dimamay, 2003). Thus, the researcher takes the endeavor of rectifying the system of developing an enrollment system that would guarantee higher measure of quality, better service and convenience at above all a reliable easy to administer and used software.

The previous enrollment system was developed and implemented in early 1990's within the La Salle University formerly Immaculate Conception College La Salle at that time, using Clipper programming language run over MSDOS – based development tools and xBase database technology. Although it is a multi-user solution running in a Local Area Network environment, it is unable to meet the demands and needs of the institution. Eventually, hardware resources have come into its obselence, resulting in unable to create new files for transaction handling and accidental death stage of the running system due to security and software wear out that triggers the researcher to design and develop a new system. Furthermore, the need to use the multitasking features of today's desktop network client machines and the ability to cope with a great number of stored data to databases, a shift from the usual system into a better system is come into its consideration (Dimamay, 2003)

To increase productivity, software applications should exploit the capabilities of modern and latest computers and the multitasking environment of current operating systems. Visual Basic has been widely used for several applications for its tested capabilities and integrity to work with massive system features. Its user-driven and friendly interfaces enable users to work with comfort and ease (Zimmerman, 1998). MS SQL SERVER database is the backend tool used to guarantee that complex and voluminous number of data could be easily accessed and processed in a short period of time, and taking over the ridding of unsatisfying problems of data processing (Shajuro, 2001).

1.1 Program/Project Objectives

Development Objectives

The research project was intended to redesign, redevelop and implement an Enrollment System that capsulates multitasking techniques. It must have a user friendly event-driven-mode software application that minimizes time and effort consumed for each processes. It must manifest capability to increase work productivity and stress free user interface.

Immediate Objectives

The project aimed to re-engineer the previous MSDOS-based Enrollment System to a client-server event driven user interface using Visual Basic run over the latest desktops available using Windows NT/2K/Me/XP operating systems as front-end client and MS SQL Server 2000 for the back-end system. Furthermore, system with multi tasks features will improve database reliability, integrity, availability and response times when accessed concurrently by great number of users.

1.2 Significance of the Project

The new system is found to be beneficial to the following.

University Registrar. The registrar is the person responsible to settle all requirements, when it comes to the administration of all educational matters of students. The system gives the registrar readily available student information.

Future Researchers. The study will also benefit future researchers because this reseach may be used as a literature related to a study that is if their research is about enrollment, or any matter related to enrollment.

Colleges. This study could be a basis for the administration to consider having an online enrollment not only for the College of

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Computer Studies, but also for the whole university. By so doing, the school will obtain a good impression to the public.

Furthermore, the successful implementation of the project has improved the enrolment process of LSU, Ozamiz City and provided up-to-date information to management for their decision making.

1.3 Output

Apart from the installed application software, a new system specification that described the enrollment system was written. This included the complete program structure and the database specifications and design. A complete documentation of all programs source code was also compiled.

1.4 Program/Project Work Activities/ Research Methodology

The project started in summer of 2004 through reviews of the previous enrollment system. Fields for the databases used were carefully analyzed considering its relationship and interrelatedness and feedbacks from the users. Identifying the kind of software to be used for development and the kind of back-end tool was the next consideration.

Familiarization of the Visual Basic Language capability and features were studied. Knowing the defined designed features was taken into account to actually translate program designed into program codes. The user interface is shown in Figure1.
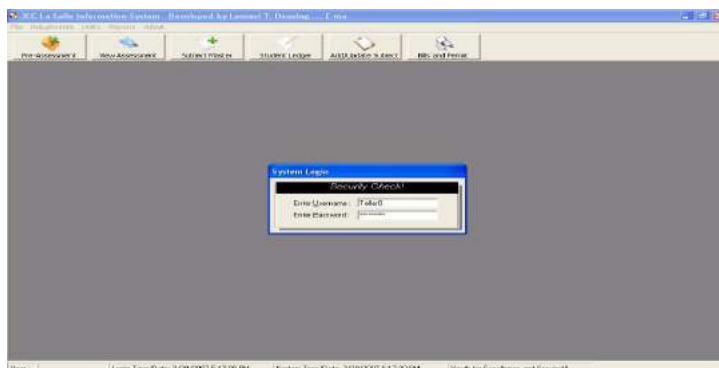
A compatible Back-end tool was its major consideration because of the need to import existing data warehoused in the previous system into the new developed. Building new warehouse tables was carefully done and breaking longer fields into parts were integral part of the process.

Modularization of the projects was carefully designed to keep a user friendly environment of the system. User's defined features were carefully examined and conceptualized. Dry run was considered in the second semester of 2004 to get feedbacks and to intensify system requirements.

- Other activities of the project were as follows:
- Constructing Entity Relationship Diagram of the System
- Constructing/Implementing new database design using Microsoft SQL and importing some of the existing. (see Database Structure)
- Gathering and capturing user-defined additional requirements, specifications and features of the design.
- Writing and testing/debugging enrollment system graphical User Interface (GUI) software routines.
- Training/Orient/Familiarizing users and implement System
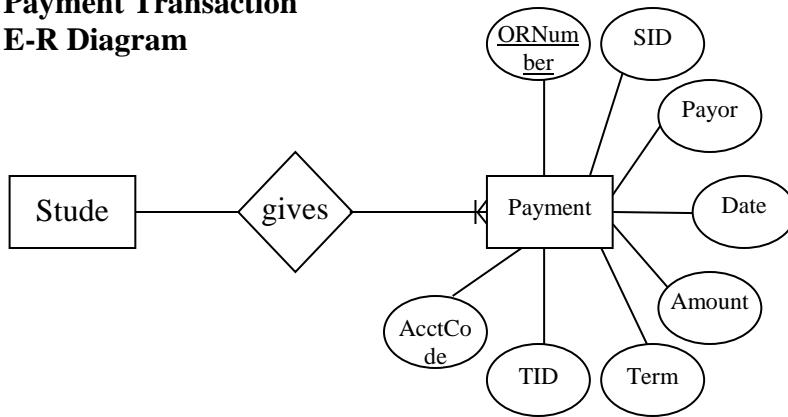
2. Project Design

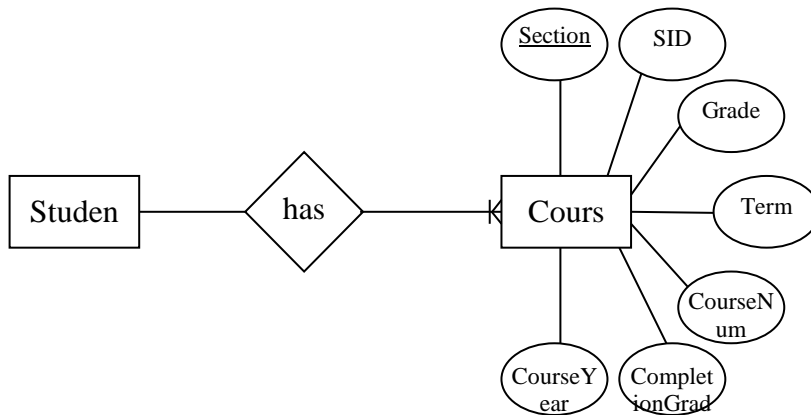2.1 Entity-Relationship Diagram

Pre-Assessment
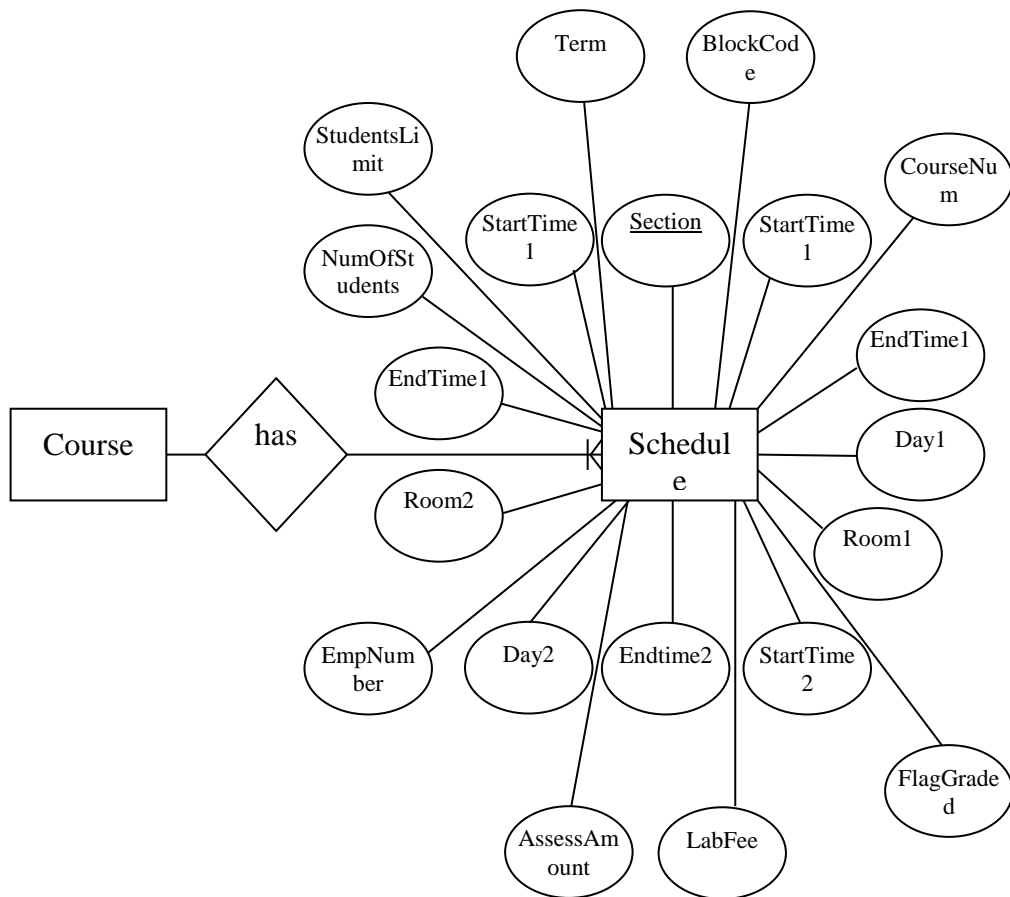**E-R Diagram**
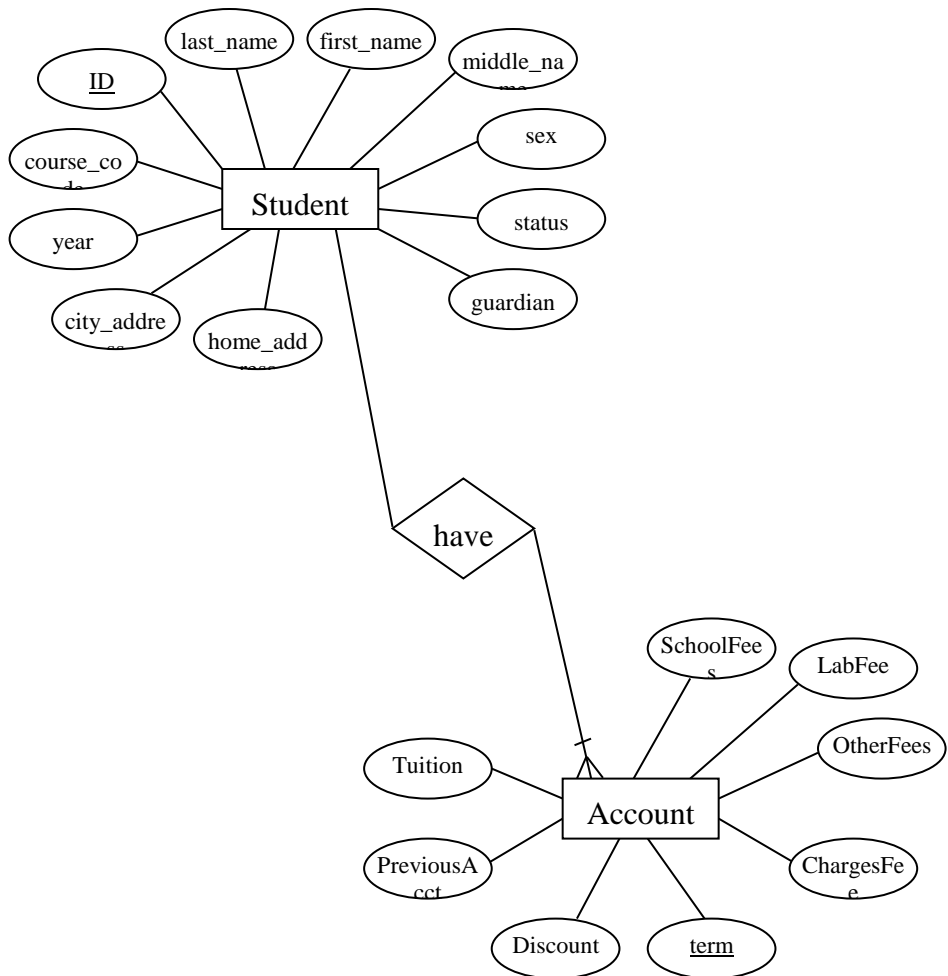
APPENDIX F ENTITY RELATIONSHIP DIAGRAM

**Payment Transaction
E-R Diagram**

**Course Encoding Transaction
E-R Diagram**

Course Offering
E-R Diagram

Term

BlockCode

StudentsLimit

CourseNum

NumOfStudents

StartTime1

Section

StartTime1

EndTime1

EndTime1

Course — has — Schedule

Day1

Room2

Room1

EmpNumber

Day2

Endtime2

StartTime2

FlagGraded

AssessAmount

LabFee

Grade Submission
E-R Diagram
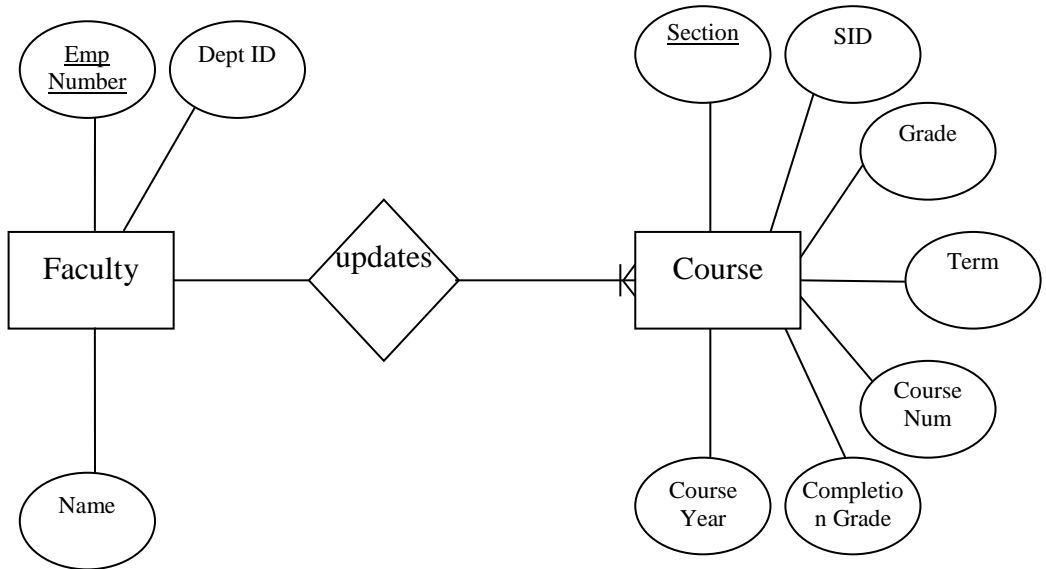
2.2 Database Structure

There are three databases used by the La Salle University Enrollment System. First database is DbMisSQL, a warehouse of data used to store information for end users and payments log. MaintenanceSQL Database is used to warehouse information of students and other related data like subject enrolled, number of units enrolled etc., and lastly Course Database to warehouse the information regarding course offerings and other data pertaining to Course/Subject Offering. The three databases are specifically a member of almost all modules of the Enrollment System. This means that these are created, accessed, and modified by the functions used by each main modules and subsystems of the same Enrollment System.

2.3 DbMisSQL Databases

This data-store maintains data concerning payments and billing of students.

TnTHEUSER

DATA FIELD NAME	DATA TYPE	SIZE	VALUE	DESCRIPTION
UN	nvarchar	20	allow Null	User Account
PW	nvarchar	30	allow Null	Password
FnName	nvarchar	30	allow Null	Name of the User
FnScrnName	nvarchar	30	allow Null	Screen Name of the User
FnAccess	nvarchar	10	allow Null	Access Code
FnPhoto	image	16	allow Null	Picture of the User

TnStuLedger

DATA FIELD NAME	DATA TYPE	SIZE	VALUE	DESCRIPTION
FldIDNum	nvarchar	9		Student Identification Number
FldDate	datetime	8	allow Null	
FldRef	char	10	allow Null	
FldDebit	float	8	allow Null	
FldCredit	float	8	allow	

	DATA FIELD NAME	DATA TYPE	SIZE	VALUE	DESCRIPTION
				Null	
	FldBalance	float	8	allow Null	
	FldRemarks	nvarchar	30	allow Null	
	FldTerm	char	5	allow Null	
*	FldSLCode	char	9		

TnPayments

DATA FIELD NAME	DATA TYPE	SIZE	VALUE	DESCRIPTION
FnORNO	nvarchar	9		Official receipt number
FnIDNum	nvarchar	9	allow Null	Student Identification Number
FnPayor	nvarchar	50	allow Null	
FnPDATE	datetime	8	allow Null	
FnAMOUNT	float	8	allow Null	
FnBalance	float	8	allow Null	
FnREMARKS	nvarchar	50	allow Null	
FnTeller	nvarchar	2	allow Null	Teller Name
FnAcode	nvarchar	15	allow Null	
FnLevel	char	1	allow Null	
FnTerm	char	5	allow	

			Null	

TnDateSet

DATA FIELD NAME	DATA TYPE	SIZE	VALUE	DESCRIPTION
FnCode	char	5		
FnSY	nvarchar	9	allow Null	School Year
FnTerm	char	1	allow Null	Semester
FnBegDate	datetime	8	allow Null	
FnEndDate	datetime	8	allow Null	
FnLock	char	1	allow Null	

MaintenanceSQL

This database warehouse data and information used for transaction for the courses to be offered. This includes description and type of courses and maintenance of all the functional processes of the system.

TblSubjectListing

DATA FIELD NAME	DATA TYPE	SIZE	VALUE	DESCRIPTION
FldSubject	nvarchar	15		Subject name
FldCode	nvarchar	6	allow Null	Subject code
FldSubjectDescription	nvarchar	200	allow Null	Subject Description
FldUnits	smallint	2	allow Null	Subject Units
FldAssess	float	8	allow Null	Subject Units Assessment
FldAssessAmt	float	8	allow Null	Subject Amount
FldLabFee	float	8	allow Null	Subject Laboratory Fee
FldClassType	nvarchar	1	allow Null	Subject Type of Class (either Lecture or Laboratory)
FldLabType	nvarchar	11	allow Null	Subject Laboratory Type

	TblStudInfo				
	DATA FIELD NAME	DATA TYPE	SIZE	VALUE	DESCRIPTION
*	FldIDNum	nvarchar	9		Student Identification Number
	FldLastName	nvarchar	15	allow Null	Student Lastname
	FldFirstName	nvarchar	25	allow Null	Student Firstname

	DATA FIELD NAME	DATA TYPE	SIZE	VALUE	DESCRIPTION
	FldMiddleName	nvarchar	15	allow Null	Student Middle Name
	FldCourse	nvarchar	15	allow Null	Student Course
	FldYear	nvarchar	2	allow Null	Year Level
	FldSex	nvarchar	1	allow Null	Student Sex
	FldAddress	nvarchar	50	allow Null	Student Address
	FldStatus	nvarchar	1	allow Null	Student Status
	FldID	nvarchar	1	allow Null	
	FldAddress1	nvarchar	50	allow Null	
	FldParents	nvarchar	40	allow Null	Student Parents name

TblIds					
	DATA FIELD NAME	**DATA TYPE**	**SIZE**	**VALUE**	**DESCRIPTION**
*	FldIDNum	nvarchar	8		Student Identification Number
	FldStatus	nvarchar	1	Allow Null	Student Status (either olr or new)

TblSchools				
DATA FIELD NAME	**DATA TYPE**	**SIZE**	**VALUE**	**DESCRIPTION**
FldSchool	nvarchar	7		College code
FldSchoolDescription	nvarchar	80	allow Null	College Description

TblCourses				
DATA FIELD NAME	**DATA TYPE**	**SIZE**	**VALUE**	**DESCRIPTION**
FldCourse	nvarchar	15	Allow Null	Course Offerings
Fldschool	nvarchar	15	Allow Null	College Code
FldDescription	nvarchar	80	Allow Null	College Description

TblBlock				
DATA FIELD NAME	**DATA TYPE**	**SIZE**	**VALUE**	**DESCRIPTION**
FldBLKCODE	nvarchar	8		Block Code
FldCOURSE	nvarchar	8	Allow Null	Course Blocked
FldYEAR	nvarchar	2	Allow Null	Course Year Blocked
FldTerm	char	5	Allow Null	Course Term Blocked

Course Databases

The course databases serve as storage of the assessment values for each subject and other related data pertaining to the courses to be offered.

SubjsTaken				
DATA FIELD NAME	**DATA TYPE**	**SIZE**	**VALUE**	**DESCRIPTION**
FldIDNum	nvarchar	9		Student Identification Number
FldPrintFlag	char	1	Allow Null	
FldPrevAcct	real	4	Allow Null	Student Previous Account Balance
FldTuitionFee	real	4	Allow Null	Student Total Tuition Fee
FldSchoolFees	real	4	Allow Null	Student School Fees
FldLaboratoryFee	real	4	Allow Null	Student Total Laboratory Fee
FldOtherFees	real	4	Allow Null	Student Other Fee
FldChargesFee	real	4	Allow Null	Student Charges
FldDiscount	real	4	Allow Null	Student Discount
FldAssessment	real	4	Allow Null	Student Total Assessment Amount
FldTerm	char	5	Allow Null	Student Semester enroll
Fldpass	nvarchar	6	Allow Null	

SubjEnrolled				
DATA FIELD NAME	**DATA TYPE**	**SIZE**	**VALUE**	**DESCRIPTION**
FldIDNum	nvarchar	9	allow Null	Student Identification Number
FldSection	nvarchar	15	allow Null	Subject section Code
FldPercent	nvarchar	3	allow Null	Student Percent Grade
FldGrade	nvarchar	4	allow Null	Student Rating
FldStatus	char	1	allow Null	Student Remarks
Fldterm	char	5	allow Null	Semester of Enrollment
FldSubject	nvarchar	15	allow Null	Subject Enrolled
Fldcompletiongrade	nvarchar	4	allow Null	Student Completion Grade
FldCrsYr	nvarchar	15	allow Null	Student Course and Year

StudEnrolled				
DATA FIELD NAME	**DATA TYPE**	**SIZE**	**VALUE**	**DESCRIPTION**
FldIDNum	nvarchar	9	Allow Null	Student Identification Number
FldEDate	datetime	8	Allow Null	Student Date of Enrollment

	DATA FIELD NAME	DATA TYPE	SIZE	VALUE	DESCRIPTION
	FldTerm	char	5	Allow Null	Student Semester of Enrollment

Schedule					
	DATA FIELD NAME	**DATA TYPE**	**SIZE**	**VALUE**	**DESCRIPTION**
	FldSection	nvarchar	15	Allow Null	Subject Section Code
	FldStartTime1	nvarchar	12	Allow Null	Subject Starting Time of Class 1
	FldEndTime1	nvarchar	12	Allow Null	Subject Ending Time of Class 1
	FldDay1	nvarchar	30	Allow Null	Subject Day of meetings 1
	FldRoom1	nvarchar	10	Allow Null	Subject Room Assignment 1
	FldStartTime2	nvarchar	12	Allow Null	Subject Starting Time of Class 2
	FldEndTime2	nvarchar	12	Allow Null	Subject Ending Time of Class 2
	FldDay2	nvarchar	30	Allow Null	Subject Day of meetings 2
	FldRoom2	nvarchar	10	Allow Null	Subject Room Assignment 2
	FldNofStudents	smallint	2	Allow Null	Number of Students Enrolled
	FldStudentLimit	smallint	2	Allow Null	Class Size Limit
	FldEmpNo	nvarchar	6	Allow Null	Employee Number to handle the subject
	FldSecurity	nvarchar	1	Allow Null	
	FldTerm	char	5	Allow	Semester

			Null	
FldBlkCode	nvarchar	8	Allow Null	Block Code
FldSubject	nvarchar	15	Allow Null	Subject code
FldAssessAmt	float	8	Allow Null	Subject Assessment amount
FldLabFee	float	8	Allow Null	Subject Laboratory Fee amount
FldClassType	nvarchar	1	Allow Null	Subject Class Type (either lecture or lab)
FldLabType	nvarchar	11	Allow Null	Subject Laboratory Type
FldGraded	char	1	Allow Null	

3. Project Design Description, Requirement and Specifications

3.1 Database Functional Description

Basic Functions apply to all database tables.

3.1.1 ADD

Process Narrative

This function adds a record for new entries containing all data fields of the database table, with one or more key identifier. The user fills up a form (input screen) detailing the information for the database. In special cases, key fields can be generated by the system (e.g. the student ID), but it can also be altered depending on the database

administrator. Since this function is provided to input a new record, the user is only required to enter the details into the text boxes and spaces provided in a form in the client side. An SQL command will handle the actual insertion process of the record into the database in the server side of the system.

Restriction/Limitation

The system should reject records that lack the necessary information especially for fields that cannot be NULL.

Formats for entries can be pure alphabet, numeric (integer or real), a combination of letters and numbers (alphanumeric), dates, etc. For example, the stud_birthdate format is mm dd yyyy where mm stands for the numeric value of a month, dd is for the 2 digit day and yyyy is the complete year of birthdate.

Performance Requirements

The function produces a record for each student and checks for duplicate records in the STUDENT file. If there is a redundancy, the function will display a message telling the user the input record already exists. It may allow user to modify/edit the old record depending on the rights the client user have.

Design Constraints

All inputs can be in lower and upper cases, the system will automatically convert each of the inputs to its upper case before it is stored in the database.

The system will not reuse any Student ID for any reason, even though that record has been deleted. Every time the user uses this function, the system generates the ID number after the previous number generated and will randomly be assigned to a specific new enrollee.

3.1.2 MODIFY

Process Narrative

It allows the user to change the field values of a student's record or any other database pertaining to the student by entering the student ID number and the new value of the field to be updated.

Only few of the end users are given this option and rights for integrity purposes, especially when it comes to students' grades, and students' records. Alternatives maybe erroneous; so only, the registrar locks this. Once verified correct, other end users are given only viewing rights.

Restriction/Limitation

The restriction in the ADD function applies also to the MODIFY or EDIT function. In addition, while modifying a student's record, the student ID number field must be protected since this is a non-editable field.

Performance Requirements

The function must provide an option for canceling changes or modifications made before such changes are saved or stored into the database.

When the user enters the code number, this function must be able to find the relevant record. For example, in the actual enrollment, a student comes to change the subject load (withdraw, add, or change), it must be able to allow the user to modify the data in every record as well. Upon modification, this function should be able to automatically call a procedure to calculate the total amount that should be paid by the enrollee. The result of that calculation should be shown on the screen.

The system should be able to check the entries for dates (e.g. student birthdate) either an invalid date format or an input that indicate a future date.

Design Constraints

Since this function will allow users to modify any field except the key field which is the student ID number, there might be a risk when the users unintentionally modify one field. Each user has its log towards the database and the hardcopy produced bears the name of the user. This can be traceable using the system and can be modified by the database administrator.

3.1.3 CALCULATE

Process Narrative

When a student enrolls in a particular semester, the total number of units is also stored in the database derived from the actual number of subjects an enrollee had. The system automatically computes the number of units enrolled through a summation process of the credits of all units enrolled. Total charges that include tuition fee for the number of units enrolled, school fees, charges, miscellaneous fee and others are also directly computed through the sum of all fees attributed to each student.

Restriction/Limitation

The function will be called by the other function. It cannot be used directly by user.

Performance Requirements

This function performs the calculation based on different formulae. For example, in a registration process, this functions gets the data from the different tables like the subject offering, student information, and from the inputted key entries.

3.1.4 DELETE

Process Narrative

     User removes specific records from the database file permanently. The user will be prompted to confirm of their intent to delete those records or not. Deleting those records will be done if confirmed.

Restriction/Limitation

     This feature of the system is one of the most crucial commands that can be issued. Only a few of the users are given the privilege to have such command. Only the administrator will have the full rights access to all these databases. The registrar and college clerks may have more rights than assessor and controller. Any deletion where certain conditions are not true will bring up a message that requires confirmation of the delete action.

     If the record to be deleted has references in other tables, deletion is not possible.

Performance Requirements

     The function must be able to delete records and yet maintain the integrity of the database. Thus, deleting unsettled records should be done record by record to push the user to check details of the record first. In addition, every deleting action needs confirmation from the users before it is actually done. This is important as deleted records may not be recovered.

     Deleting some records in a certain range might be needed in case users intend to remove all the transaction records in a certain period to provide more spaces in the hard disk. In this case, we assume that users should make a back up for the data removed.

To avoid deleting unsettled transaction, this function should indicate to the user if there is
any unsettled transaction in the records that to be deleted. In this case, the user has options to delete or to cancel deletion.

Design Constraints

Deletion of a record does not affect the student identification number field of the remaining records. This student identification number generated for each member is for one-time use only and is never re-used for any other latter members.

The system should not keep old transaction files for a long time because it wastes disk space. So, deleting old files is suggested. Unfortunately, once records are deleted from the database, it cannot be accessed again by the system. Although it may be recovered using the DBMS, this facility will not be included in the system.

3.1.5 INQUIRY/REPORTS

Process Narrative

Using this function, users should be able to search particular data such as:

1. All transactions that transpires in a certain year or month (entering the year or month)
2. All details of a particular database member (entering *subjcode* or *studID*).
3. Number of student per college department.
4. Statistics or male/female for a particular semester (SY-SEM)
5. Others…..

Restriction/Limitation

Users can only get information in the forms prepared by the system builders.

Performance Requirements

This function should perform as a facility for queries so that users maybe able to see the information they need on the screen. As an additional facility, this function may provide options so that users will be able to send the information either to a printer or to a file.

Design Constraints

Since the format of the presented information will be built as a part of the proposed system, any other format requested after implementation will demand a modification of the whole implemented system.

3.1.6 SEARCH

Process Narrative

The system user can search for details of:
1. A particular record. To get this information, user may use the key identifier
   (e.g.*stud_id*) or the student's name as the search string.
2. All subjects with some particular fields.To get a list of all subjects of a particular student/faculty, user has to define the school year and semester.
3. Others…

Restriction/Limitation

Name for the search string is automatically changed to uppercase since all data stored in the database are in uppercase. The string could be the first few letters of the name being searched or exactly the same name stored in the database.

Performance Requirements

Response time must be acceptable to the user. This means there is a response time of less than a minute or there is an indication to the user of how the search is proceeding through screen messages or visuals.

Basically, the search is reasonably fast because databases are indexed or certain conditions have been embedded in the SQL commands.

Design Constraints

Any other type of search or query requested after the implementation will demand a modification of the implemented system.

3.1.7 PRINT

Process Narrative

It generates reports that appears on the screen (default) or sends the reports to a printer or file, as well.

Users may generate reports that can be shown either on screen (as default) and has options to send it either to printer or file. The report generation maybe done simply by selecting one of the choices that appears on the menu. If necessary, users might be required to enter some specific data before the reports are generated.

Restriction/Limitation

Users can only get information in formats that are predefined by the system builders.

Performance Requirements

The user is able to print a list based on user specified criteria or individual records displaying all or certain specific information, for example, about a student.

This function should perform some choices on its menu. The choices are some reports in some particular format. For example

- All information about a certain transaction/database table
- List of all transactions transpired in a certain year and / or month
- List of all subjects of a particular student (evaluation)
- The certificate of registration of each student, including assessment
- The official receipt for billing

Since this function needs a printer as a device, it is also important that this function provides a function for the printer status and gives a message to users if the printer is not ready yet.

Design Constraints

Any other format requested after implementation will demand a modification of the implemented system.

3.1.8 BACK-UP CONSIDERATIONS

All database files are periodically backed-up daily during user slack periods occurring every 5:30 PM and 12:30 PM on Saturdays. Back up files are stored in hard disks and are stored in a safe place security and good disaster recovery. Back up files are not over written but a new file is created by every back up process.

3.2 Design Features and User Interfaces
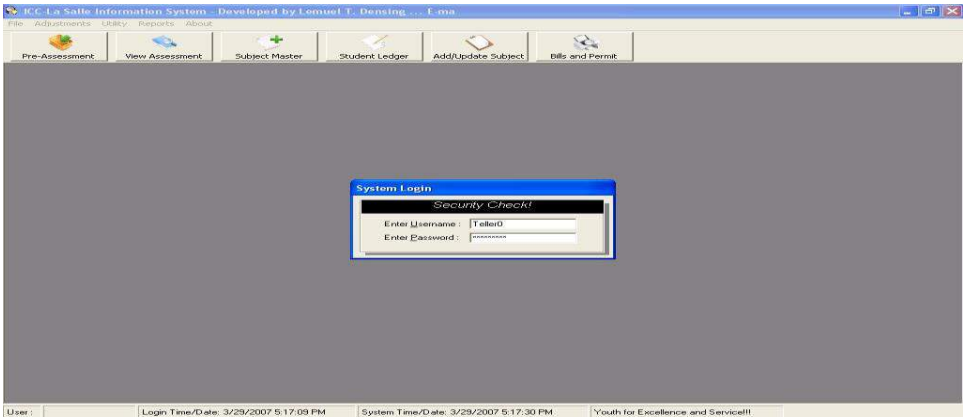
Figure 1. Main Menu with login screen
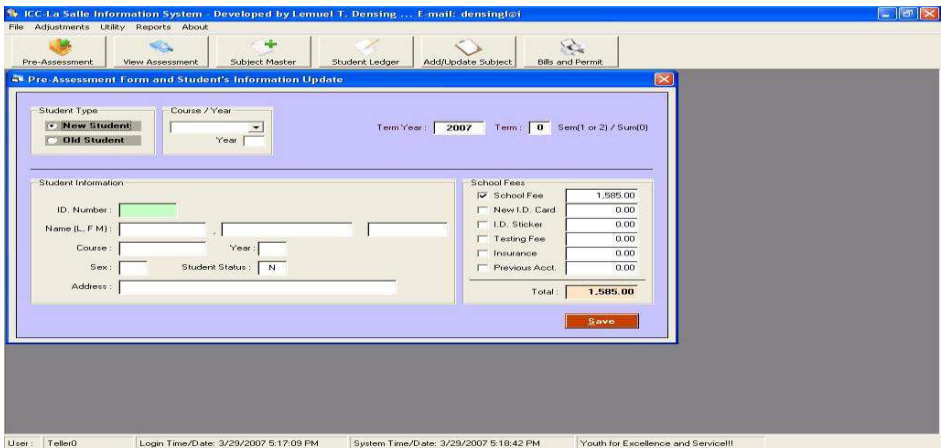
Figure 2. Pre Assessment Screen

Figure 3. Adding of Subject Screen

Figure 4. Subject Listing Screen

Figure 5. Enrollment Form Screen

Figure 6. Certificate of Enrollment
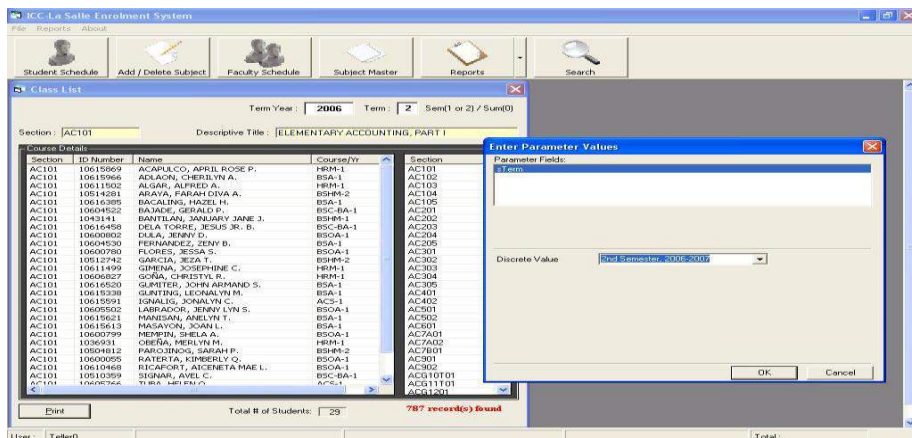
Figure 7. Class List Printing Screen

Figure 8. Class List

Figure 9. Enrollment List

Figure 10. Grade Sheet Printing

Figure 11. Grade Sheet

Figure 12. Grade Entry

Figure 13. Grade Viewing

Figure 14. Grade Printing

Figure 15. Report of Rating

Figure 16. Promotional Report

Figure 17. Mailing Address Form

3.3 Special Consideration

To ensure that the system is highly operational, provides convenience to users and increases work productivity, the researchers added some special considerations:

1. A mechanism to protect non-editable fields like student ID, Student name, etc. will work well to maintain data integrity.
2. A transaction may open more than one database simultaneously. If these databases are related with particular keys, the researchers ensure to follow referential integrity rules being enforced. These rules are: a) a new record cannot be added in the referring database if there is no entry in the referred database, and b) an existing record in a referred database can not be deleted if

the corresponding entry/entries in the referring database have not yet been deleted.

3. A facility for updating and deleting function to confirm or cancel the transaction, providing options to the user.

4. A facility for users to go back to the previous screen or to main menu screen or to access directly the desired screen.

5. A facility that protects the system from unauthorized users by providing passwords and limited access to some modules only.

6. Integration of student, the subject and the part of the personnel information system as well as the grading and part of the billing system of LSU. In this manner, that data and information will be available to other administrative transactions later.

The system will not include either the accounting process associated with the whole LSU, but the student transactions only. However, to provide interface with the Accounting System, for every payment, this system will consider information about the amount paid, date paid and payment type.

The system design focuses on the main aspects of the system. Therefore, it includes utilities that might be needed in the implemented system such as print function.

3.4 Audit Trail and Transaction Facility

Database security and data integrity are very critical issues that must be properly addressed and considered in dealing with a development of a complex system. In the system, security provisions in being considered are implemented using access code like username and passwords enabled login then by predefining different access rights for different types of users. Such a facility provides reliable audit and trail on tracking all transactions pertinent to any data on the database and the identification of the user responsible for each transactions. All

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transaction logs are kept and put into archives to free disk storage that can also be retrieved anytime the administrator wish to view the content.

4 . Run Time Testing/Debugging Findings and Results

The following are the findings and results obtained during the testing and implementation stages of the system:

In the first testing-implementation year, several results showed the needs to debug the system to meet the different needs of the college and to further enhance the user interface and user friendly of the system. The feedbacks coming from the users are:

1. The new system cannot determine conflict and overlapped schedules of subjects enrolled by the students.
2. It takes time printing the enrolment certificate; the system needs to have a higher speed of microprocessor.
3. The class size of the subject is system generated; needs to be extended.
4. The summer and first semester subject offerings were merged
5. Run time error sometimes occur
6. Cannot open different tables at a time
7. Grades of student were omitted for verification.

After its tests for a year the system is currently highly operational meeting the needs of each individual users. The observations are:

1. Faster in terms of enrolling different subjects.
2. Can view the grades of student by course and by year level while in the process of enrollment
3. Printing of forms such as Certificate of Enrollment, Class List, Grade Sheet, Grade Entry, Promotional Report and other reports has been fully functional and generated on time.
4. Issues on conflict of schedule and overlapping of time have been regulated and minimized and subject to human error in encoding only.

5. The student ID is randomly system generated.
6. Correct Assessment of Subjects is highly observed and only the officer incharge of the Assessment can access.

5. Conclusions

The new system designed and developed has been fully functional since academic year 2005. With its existence, the enrollment process has speeded up, errors were minimized and most of them are subject to human error and can be tolerated, and most of all reports are done and submitted to authorities in due time.

Furthermore, the institution registrar work more productivity during enrollment period and process documents related to students registration faster with convience and well good format of documentation. Evaluation procedures also in colleges for student's registrations and other enrollment related process are now exceptionally done thoroughly in just a short period of time.

The new system developed is truly beneficial to La Salle University. It helps the institution to keep track of technological advancements and application competitive endeavor.

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The Co- curricular Program of La Salle University:
A Decade of Transformation

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Abstract

This paper detailed the exciting, and enriching transformation of the co-curricular program of the University. The account started in 1991-1994 when La Salle University was still Immaculate Conception College until it became Immaculate Conception College-La Salle, when the De La Salle Brothers took over the institution from the Columban Sisters.

1. Introduction

Institutionalizing change into an existing, traditionally planned co-curricular program is challenging. The person who institutes change must expect stiff resistance and be ready to struggle; otherwise, the change will go to oblivion. Though not easy, the process of transformation is nevertheless enlightening, exciting, and enriching.

This paper is a personal account of how the co-curricular program of La Salle University, formerly Immaculate Conception College (ICC) and Immaculate Conception College-La Salle (ICC-LS) was transformed.

In the said process of transformation, my personal account starts from being an ordinary student, as student leader of ICC, as a Faculty member, then as Social Science Coordinator of ICC-LS and finally as Dean of Student Affairs when ICC-LS metamorphosed into a University. I started as a mere recipient, then as a spectator and finally as , one of the prime movers of the transformation.

2. Context

A. Co-curricular Program of Immaculate Conception College (1991-1994)

My experience with the co-curricular program of ICC has two parts such as the time when I was just an ordinary student 1990-1992 and when I became one of the student leaders from 1992 to 1994.

a.1. As an ordinary student

From 1990 to 1992, I was enrolled at ICC in the second semester of 1990. In that experience, I still remember that I did not find belongingness in the school. There was seemingly no opportunity for me to be involved in co-curricular activities. Most of the activities were confined only inside the school. What I remembered was I became a member of Organization of Future Educators (OFE) because all students enrolled in education were automatically declared members of OFE. I was elected Mayor of our advisory group but it had no bearing at all because according to our adviser, "Advisory group will only have one meeting, the first and last." I told myself that I would make a difference. I would make my advisory group active and dynamic". At the end of that semester, our adviser was proven right. We had only first and last meeting. It was simply because we did not know the aim of having advisory group. It was better in the first semester because advisory group were utilized for the Acquaintance Party of the department; but, after the acquaintance, advisory groups died a natural death. There were only few active and functional organizations.

Most of the existing organizations had compulsory membership based on the program, course, and major taken by the student. Co-curricular activities were minimal in spite of the fact that the school provided a "free time" for curricular and co-curricular activities, that was every Monday, Wednesday and Friday at 3:30-5:00 p.m. It was called "free time" because there were no scheduled classes during the said time. However, the time was seldom used as intended. Many of us spent the said "free time" watching movies, window shopping, and having

drinking spree at the nearest store. It was at the time that I was active in fraternity and other activist organizations which were not recognized by the school.

Noticeable events in the college were the Sports Fest and ICC Foundation Celebration known as ICC Day. Sports Fest took place in September while ICC Day was every February. The said events were the highlights of co-curricular activities in the first and second semesters respectively. But, what was an ordinary student like me doing during these events? Well, I was not good in any sports. Besides, there were only limited sports activities. Hence, a majority of us went home while others had their vacation. Only the players, officers, officials of the games, faculty, staff and administrators were present in the entire event. It is still fresh in my memory that crowds were only present in the first day because many students were involved in playground demonstrations. Indeed, only few students participated in those important events.

a.2. As student Leader

My third and fourth year in school gave me opportunity to be involved in activities. Maybe, it was because we were already the elders in our department. I was elected Vice-President of the Organization of Future Educators. I was then very busy. We had Acquaintance Party, Sports Fest and ICC Day Celebration. Except for the acquaintance party, our Sports fest and ICC day had less student participation. Only the officers, the players and few cheerers are around. It was then, that during the first semester of 1993-1994, the officers of the Student Council imposed fines on those who did not attend in the amount of 25.00 pesos. But still there was no improvement. Others were willing to pay the fines while others would just come to school for attendance checking and then went out of the campus. They returned when it was already time for attendance checking. What was worst was that some members corrupted their officers by eliminating their fines since the officers were their classmates and friends.

In the second semester of that school year, the Student Council with the approval of the administrators decided that after the attendance

checking, students will not be allowed to go out of the campus. There was formidable resistance from the students.

Co-curricular activities of Immaculate Conception College-La Salle (1997-2003)

In 1994, ICC became ICC-La Salle. It was another period of the school's history. The De La Salle Brothers acquired ICC from the Columban Sisters. I do not have a lot of events to recall what happened in 1994-1997 because after graduation. I worked in Zamboanga del Sur and then went abroad. My life with my Alma Mater was reestablished in 1997, when I was hired as one of the Social Sciences Faculty from 1997 to 2001, made Social Sciences Coordinator; 2001 to 2003 and promoted as Dean of Student Affairs 2003 to date.

b.1. As Social Sciences Faculty

As a faculty, I observed that there were not many changes with regards to the co-curricular activities. The activities were almost similar to what I experienced when I was still a student. Activities were mostly confined within the school. Programs and activities held at the Arts Center were similar to what had been in the previous years. There was less participation in socio-political activities. Still, the Sports Fest and ICC-La Salle Day Celebration had less support from the students. The said plight continued until Brother Benildo Feliciano, FSC became president of ICC-La Salle in 1998.

His stint as president served as turning point of ICC-La Salle. He had instituted reforms in the school,in its   organizational structure and policies. Indeed, the reforms were so revolutionizing that I mentioned them in my article published in the *Mediare*, the former publication of the School of Arts and Sciences. One of the changes that I mentioned was the bold participation of the school in advocacy work. ICC-La Salle started to get involved in socio-economic and socio- political issues. One of the activities initiated by the school was involvement in the nationwide indignation rally after the collapse of the impeachment trial

of President Joseph Estrada. Since then, ICC-La Salle was at forefront in Ozamiz that demanded the resignation of President Joseph Estrada.

Brother Benildo, as we fondly called him began infusing changes in transforming the school including the co-curricular programs. He had directives that gear towards the transformation of the programs. He instructed that compulsory contribution for co-curricular activities must be minimized. He made known his criticisms and disappointment of the 3 R's recycled, redundant, and repetitive activities and programs. He demanded new things to happen. And, he wanted co-curricular like Sport fest and ICC day to be well participated by the students or else the activities will be cancelled and have classes instead.

b.2. As Social Sciences Coordinator

My stint as Social Sciences Coordinator was an eye-opener with regards to Lasallian education.   Brother Benildo started to drop mails in my office containing information from the De La Salle District of Justice & Peace. They were information that encouraged me to lead the school towards more involvement in socio-economic and socio-political advocacy work. With the support of Brother Benildo and of the Lasallian Family, ICC-La Salle became known in its advocacy. It was a transformation! More students got involved in activities that promoted social awareness and social consciousness. Proofs of the said transformation were the news of the different local radio stations and local and national newspapers which cited the advocacy works of the school.

It was then that I fully understood that a Lasallian education means holistic development of students.   It emphasized students' involvement, making them responsible citizens and servants of God.

C. Co-Curricular (2003-to date)

c.1. As Dean of Students Affairs

My appointment as Dean of Student Affairs began with a high note of expecting during the second year of our new President, Br. Narciso Erguiza Jr, FSC. Known as Br. Jun who had replaced Brother Benildo. He said; "I want new activities and programs that will make students participate. I want officers of student clubs and organization to be active, dynamic, and would strive for change. And, I want them to become individuals who strive for excellence and who are willing to serve God and country." Brother Jun continued, "I do not know how to realize them but I am entrusting them to you. That will be your job."

I accepted the challenge in spite of my limitations. I was new to the job. I had no experience; yet, I accepted it because I know the Brothers would not abandon me. Everything would be for our dear students, for our nation and for God. With the leadership of Brother Jun, the Vision-Mission of the school was revised and a school motto was crafted, Youth for Excellence and Service with the acronym YES. The motto became my compass. Programs and activities were directed towards the formation of the students to become individuals who would strive for excellence and service to the community.

First semester of 2004-2005 was my "baptism by fire". The free time for activities every Monday, Wednesday and Friday was changed from 3:30-5:00 to 3:15-5:00 to give more time for co-curricular activities. Policies that were not part of the culture of ICC-La Salle at the time were pronounced, such as:

1. Programs and activities must start on time.
2. Presentation must be prepared with excellence.
3. There must be maximum student participation in all co-curricular activities.
4. Activities must be excellent but with minimal monetary expense on the part of the students.

To implement the policies, the Sports Fest underwent experimentation. It was decided to start SportsFest in July and to culminate in September. Elimination rounds of the Sports Competition among the four schools were done every 3:15-5:00 of Monday and Friday; Wednesday 3:15-5:00 for the Holy Eucharist Celebration. Culmination of the Sports Fest was done in one day only. There was no checking of attendance and no fines. To minimize expenses, the Physical Education faculty, the varsity players and MAPE-PEHM[2] students were mobilized to serve as officials of the games instead of hiring expensive sports officials. MAPE-PEHM was a student organization of education students who were taking Physical Education, Health and Music as major.

At the end of the Sports Fest, evaluation was conducted. The results were:

1. The officers of the four school organizations complained that they were tired and exhausted because every week they had activities instead of the usual 3-day activities.
2. Funds were drained because they had to spend every week.
3. There were complaints regarding officiating. Players did not trust the decisions of the varsity players and MAPE-PEHM students because they belonged to a school.
4. School Deans complained that time which could have been used for academic undertakings was used during elimination rounds. They could not stop themselves because teams carried the name of their schools.
5. There was no maximum student participation during the culmination day. Only the players, officials of the games, officers, and a few faculty and administrators were on campus.
6. Students were complaining of the one day break for culmination. They said it was too short for a break that they could not go home nor go for a vacation.

7.   The Sports fest was a failure.

Among the negative reports, the evaluation focused on the lackadaisical student participation. Questions were raised, "Why students were not so interested to be involved with? Why did the students not cheer during games?" Among the various reasons, it zero in to a reason that most of the students did not participate or get involve because they were not part of the activities at all. Most of those who were interviewed stated that there were no games or activities for them. They did not cheer because the players who were playing were the same people in the previous years and they knew already who will win. In other words there's no reason to cheer because there is no cause for excitement at all.

Nevertheless, it was realized that involvement begets participation. To have more student participation, students must be involved in more sports and other activities. If a majority of the students are involved, maximum student participation will be attained. Maximum student participation means majority are given the opportunity to be developed physically, socially, and psychologically.

The evaluation led to a recommendation that the officers of the Student Council and other student organizations, Sports Moderator, and Dean of Student Affairs will conceptualize a program that will make majority of the students get involve and participate. And, this should be implemented in the second semester of 2004-2005.

3. The Conceptualization of the Color Teams

Consultations were conducted. Faculty members who graduated from other colleges and universities were consulted. Output of the consultation were collated and discussed. There were suggestions to have sports activities during the day and activities in the evening, literary, musical and cultural. All suggestions were enriching but they fell short as to how to ensure maximum student involvement and participation. Some suggested to create year level teams instead of by school teams. The idea was not accepted because it would not make a big difference.

Year level teams would result with four teams only, the same with the four schools. Besides, there were only few fourth and fifth year students. Most of them would be very busy with their academic requirements.

The search was on, until the High School department of ICC-La Salle had their Sports Fest. They had Color Teams. The idea and the actual activities were studied carefully. A SWOT' analysis was conducted. Data were tabulated, discussed, interpreted, and analyzed. Finally, a revised program of Color Teams for the college department was conceptualized.

The student population of ICC-La Salle in the first semester of School Year 2004-2005 was approximately 3,019 students, distributed into four schools. As shown in Table 1, the School of Business had the highest number of students while the School of Arts and Sciences had the lowest.

Table 1 shows the distribution of students according to colleges

Table 1
Population Distribution of Students According to Colleges

Four Schools	Student POPULATION
School of Education	801
School of Business	1183
School of Engineering and Information Technology	556
School of Arts & Sciences	479

To determine the number of students that were involved in the Sports Fest activities, a committee, composed of student leaders, Sports Moderator and Dean of Student Affairs, compared the existing sports activities and the number of students involved. Table 2 shows the statistical comparison. The number of students that were involved was approximately determined at the highest maximum level.

Table 2 shows the sports activities and the number of students involved

Table 2

Sports Activities and the number of Students Involved

Sports Activities	Population of the students that will be involved
Basketball	10 players x 4 schools = 40
Volleyball Men	10 players x 4 schools = 40
Volleyball Women	10 players x 4 schools = 40
Patintero Men	10 players x 4 schools = 40
Patintero Women	10 players x 4 schools = 40
Soccer Softball	12 players x 4 schools = 48
Softball Men	12 players x 4 schools = 48
Softball Women	12 players x 4 schools = 48
Badminton M/W, D/S	6 players x 4 schools = 24
Table Tennis Men/Women, Double and Single	6 players x 4 schools = 24
Dart, Chess, Scrabble & Game of the Generals	8 players x 4 schools = 32
Athletics	8 players x 4 schools = 32
Dance Sports (2 pairs)	8 dancers x 4 schools = 32
Cheer Dance Competition	40 dancers x 4 schools = 400
Others	20 participants x 4 = 200
Parlor Games	15 participants x 4 = 60
Officers and Cheerers	30 participants x 4 = 300
Officials of the games	30 Varsity + 20 MAPE-PEHM= 50
Total number of Involved students	257 students x 4 schools = 1, 028 students

Table 2 shows that there were only 1, 028 students who were involved. It was only 34.05 percent of the 3, 019 students' population. In effect the Table shows that 1,991 or 65.95 percent were not involved and did not participate. They were the students who did not come to school during Sports Fest and ICC Day because they had nothing to do.

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Imposing higher fines, as what had been done in the previous years, forced them to come to school for attendance checking only. They came to get attendance for <u>Time In</u> and then go out. They returned, when it was time for the attendance distribution for <u>Time Out</u>.

The Physical Education Faculty, Varsity players, and MAPE-PEHM students, who were mobilized to officiate, were demoralized because the opposing teams accused them of being biased. So hiring of officials was the best option, which would entail more expenses and additional contribution from the students.

There were only 257 students involved in each school. Only 21.72% of the School of Business and Accountancy, 32.08% of the School of Education, 46.22% of the School of Engineering and Information Technology and 53.65% of the School of Arts and Sciences students. Moreover, the students in the school with small population contributed more for the uniforms, snacks and others while the school that had the highest population, had less contribution. This created a disparity.

Due to the said predicament, new sports activities were introduced and the Color Team was conceptualized in the second semester, School Year 2004-2005. Table 3 shows the new sports activities and the number of students that would be involved in Color Teams.

Table 3 shows the color teams' sports activities and number of students that will be involved

Table 3
Color Teams' Sports Activities and
Number of Students that will be involved

Sports Activities	Population of the students that will be involved
Basketball	10 players x 12 Color Teams = 120

Street Basketball Women	5 players x 12 Color Teams = 60
Volleyball Men	10 players x 12 Color Teams = 120
Volleyball Women	10 players x 12 Color Teams = 120
Patintero Men	10 players x 12 Color Teams = 120
Patintero Women	10 players x 12 Color Teams = 120
Soccer Softball	12 players x 12 Color Teams = 144
Badminton Men/Women, D/S	6 players x 12 Color Teams = 72
Table Tennis Men/Women, D/S	6 players x 12 Color Teams = 72
Dart, Chess, Scrabble, Game of the Generals & Chinese Checkers (Men & Women)	11 players x 12 Color Teams = 132
Athletics	8 players x 12 Color Teams = 96
Cheer Dance Competition	40 dancers x 12 Color Teams = 480
Others	20 participants x 12 = 120
Parlor Games	15 participants x 12 = 180
Officers & members	11 participants x 12 = 132
Officials of the games	30 Varsity + 20 MAPE-PEHM = 50
Total number of students that will be involved	234 students x 12 Color Teams = 2, 808 students

Table 3 shows that there are 2, 808 out of 3, 000 students that can be involved in the Color Teams. It was 93.6% compared to the 34.27 % in by school teams.

Color Team seemed a good venue to mobilize the varsity players and MAPE-PEHM students to officiate because they could not be accused of rendering biased decisions. They were distributed to the different Color Teams. They did not officiate in a game in which their Color Team was involved. In effect, while on the process of serving their fellow students as officials they were also trained to become future officials of the different sports in their community. On the side of the students, they would no longer contribute for the honorarium of the hired officials of the games, which usually cost about Php.40,000. Compared to other tertiary institutions in Ozamiz City, their students contributed as much as 500 pesos for the Sports Fest and only the players received uniforms, snacks, lunch and others. With the Color Teams, contribution did not reach two hundred pesos and everyone had the opportunity to enjoy their contributions.

4. The Making of the Color Teams

The competition of the Color Teams was launched in the second semester of 2004-2005. The 2,620 college students from the different programs and schools were randomly divided into 12 Color Teams. The males and females were equitably distributed to 12 Color Teams. Assemblies of Color Teams were held to explain to the students the rationale and significance of the program. Color Team officers were elected such as Athletic Manager, which had an authority and responsibility equivalent to a president of student organization, Male and Female assistant athletic managers which acted like vice-presidents in a student organization, treasurer, secretary and PIO. Faculty and Staff advisers were also selected to help the students. As advisers, they were given honorarium from the Student Council, Departmental Fee or Color Team whichever had available funds. The Chairman of the advisers received Php 500.00 while the members received Php 300.00 every semester.

Two elimination rounds among the teams started in December and culminated in February in time with ICC-La Salle Day Celebration took place. The semi-finals and championship rounds were held during

the ICC-La Salle Day. During this two-day celebration, the student organizations including the four school organizations had booths that sold food, drinks, and souvenir items. Fifteen percent of their gross income went to the Scholarship Fund Drive of the school. The net income became part of their standing funds, for their other activities such as the community extension services.

After the celebration, there was an overwhelming agreement of the color Team scheme a success. There was maximum student participation; the school looked like having a town fiesta. Aside form sports activities, there were literary, musical, and cultural competitions. Their students were on campus during the two-day activity; yet, they had contributed Php 80 only. Due to its success, the Color Teams was continued through second semester of 2004-2005 to second semester of 2006-2007.

The Color Teams brought other significant positive results

1.　　　New group of student leaders have been trained to become future leaders of the community.
2.　　　Cohesive Lasallian studentry was strengthened. The officers and members of each Color Teams came from the different colleges. Students were not polarized by college or program but united in a Color Team.
3.　　　System of Check and Balance among the officers was prevalent. One student could not influence the officers to corrupt because the officers came from the different schools. For example, one Color Team had an athletic manager whom as a BSN student, assistant athletic managers who are education students, treasurer and secretary who were Business Administration students and a PIO who was a criminology student.
4.　　　The freshies and transferees felt a sense of belongingness since Color Team officers really ask for their cooperation; otherwise they would lose games by default. In other words, in their first year in school, they were already given importance and accepted. In

effect, they were no longer be tempted to join some undesirable groups.

5. Officers of school organizations were relieved of sports related activities. They focused more on academic -related and community extension activities.

6. The deans had more time for their main task, the management and supervision of instruction and curriculum since they had less involvement in co-curricular responsibilities.

Despite all these positive results, there are still minor problems that need to be addressed such as:

1. Non-cooperation of some members.
2. Inactive Color Team officers and advisers.
3. No systematized checking of attendance in some Color Teams.
4. Complaints about fines.
5. Complaints about being unavailable at 3:15-5:00 p.m. especially among fourth and fifth year students, working students and married full time students.
6. Problem in the distribution of printed Color team T-shirt to each student.
7. Too much time is spent for meetings of Color Teams during the 3:15 -5:00 free time.
8. Conflict of activities with other curricular and co-curricular activities.

Solutions to the said minor problems are on pipeline. Consultations among students, student leaders, faculty, staff, and administration were conducted. Hopefully, these would be minimized if not totally iron out in the next Color Team Competitions.

A number of students, faculty and administration suggested that since Immaculate Conception College-La Salle is now La Salle University and the old four schools is now replaced with six colleges, it

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could be best to dissolve the Color Teams and have teams from each college namely, College of Nursing, College of Business and Accountancy, College of Arts and Sciences, College of Education, College of Computer Studies and College of Engineering. Their suggestion is based on two arguments:

1.   That in the whole Philippines or maybe in the whole world, only La Salle University has Color Teams.

2.   Loyalty and cohesiveness among members of the teams will be more apparent because they belonged to the same college.

The suggestion is examined and analyzed, the following responses were presented:

1. It does not matter if only La Salle University-Ozamiz has Color Teams. In fact, it is a reason to be proud of because we are unique from other learning institutions in the world. Besides, having the Color teams does not mean we abandon the college organizations. We only redirect their focus and thrust. Co-curricular programs of a learning institution depend on its vision and mission. La Salle University has clearly pronounced that it aims to provide education that caters to holistic development and produce graduates who are excellent and service oriented individuals. The university aims at addressing each need of every student entrusted them by parents and God. Each student pays, therefore each must be served and be given equal opportunity to grow and develop holistically.

2. Dissolving the 12 Color Teams and replacing it with 6 teams of the six colleges tantamount to depriving 50% of the students the opportunity to grow and develop. Therefore, replacing the 12 Color Teams with six College Teams will be unjust and unfair on the part of the would-be disenfranchised students. Moreover, replacing the Color Teams is an indirect way of saying that 50% of our students will not be involved bringing   us back to the old problem of the lack of student participation.

3. On the argument that loyalty and cohesiveness will be more prevalent if students are competing for their College, I would say, it is baseless. As far as I have observed, turn out of students who are not involved in any activity is very minimal. In fact, fines were instituted to compel the students to stay on campus.

4. For me, the vitality of the Color Teams will come to an end if there are more colleges in La Salle University, enrollment in each college are equitably proportionate and if there are more facilities that will cater to their increasing demands.

5. Another way of eradicating the vitality of the Color Team is through the process of revising the Vision-Mission and Motto of the school. I doubt if there are Lasallians who are sane enough to do such a move now.

Therefore, instead of dissolving the Color Team let us expand it. The male and female working scholars ask the Student Affairs Office if it is possible that they be created as a separate Team. So we have the thirtieth team. To have it balanced, I planned that those students who are les happy and less satisfied with their existing teams because they can not fully participate will be formed into the fourteenth team.

5. Recommendations:

To make the Color Team more successful the following recommendations are endorsed:

1. Faculty members should be mobilized to help in explaining to the students the significance of the Color Teams.
2. Increase the number of Color Teams to allow more students to get involve.
3. Institute mechanisms and other activities that would motivate the members and officers to do their task without being threatened by fines.

4. Study the possibility of abolishing compulsory attendance and fines without sacrificing the aim at having maximum student participation and involvement.
5. Establish more stable source of funds of each Color Team as well as transparency in the disbursement of funds.
6. Establish a system of feed-backing that would cater to the immediate needs of the officers and members of the Color Teams.
7. More modules on leadership skills development shall be provided to the officers of Color Teams.
8. Conduct in-service training for the advisers of Color Teams to make them more effective and efficient advisers.
9. Study the possibility of increasing the honorarium of the advisers of the Color Teams.
10. Provide a calendar of activities for the Color Teams to avoid conflict with other curricular and co- curricular activities.

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Assessment of the Property in Binuni, Bacolod, Lanao del Norte: Basis for its Utilization

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Abstract

The De La Salle Brothers of the Philippines District has commissioned La Salle University, Ozamiz City to assess a three hectare property in Binuni, Bacolod, Lanao del Norte. Based on the findings, the property can be utilized as agribusiness farm extension of the College of Business & Economics.

1. Introduction

1.1 Geographic Location and Description

Bacolod was once a mere barrio of the municipality of Kolambugan, the oldest town of the province of Lanao del Norte. The term "Bacolod" is derived from a Maranao word "Bobolotoa" meaning a small rocky island. This island is located at a point of an existing barrio called Ponta Binuni now, Bacolod is a 5th class municipality in the province of Lanao del Norte, Philippines (http://en. Wikipedia. Org/wiki/Bacolod,_Lanao_del_Norte). According to the 2000 census, it has a population of 17,020 people in 3,515 households. Bacolod is politically subdivided into 16 barangays. Binuni is the fourth of its barangay with 7 puroks. This is where the three hectare property of the De La Salle Brothers is located. The property is situated two hundred meters from the national highway going to Cagayan de Oro City and about thirty-five minutes travel time to reach the place from the port of Mukas.

The property is a typical coconut farm with perennial trees planted in different areas. The type of soil ranges from sandy to sandy clay with a thin top layer of organic matter. The terrain is rolling with

uneven dimensions with big clusters of stones spread in various areas. The property is blessed with a small flowing spring and a swamp where mangrove and nipa grow. The road leading to the property from the national highway is partly cemented; the rest is a long portion resembling only a human trail. So, when it rains land vehicles have difficulty traversing the muddy road.

It has electricity powered by Lanao Del Norte Electric Cooperative (LANECO) but unfortunately, no water system serves the area. The structures currently erected in the place are copra dryer, a comfort room, four small to medium cottages, a pigpen for four pigs, and the caretaker's hut which serves as the reception area for visitors.

1.2 Socio-Economic Condition

    a. Population

As of 2000 National Statistics Office (NSO) census, the total population of Binuni is 1,702 with over 59% predominantly young (Mr. Tubongbanwa).

    b. Agriculture, Natural Resources

The barangay has basically an agri-based economy blessed with rainfall that is fairly distributed throughout the year and whose location is in the outside fringe of the typhoon belt. These are factors that allow production of variety of food and commercial crops. The major product is coconut. The barangay is planted with coconuts, intercropped with various high value crops like corn, bananas, camote, cassava, pineapple, mango, durian, langkong lansones, and many others. On the coastal area of the barangay further to the sea, the people are blessed with a vast area where aquamarine products abound.

    c. Trade and Industry

Since the area has a vast farmland, the promising investment pertains to agriculture, like the plantations of coconuts, and intercrops with high yielding crops. A very promising venture now with the farmers is the intercropping of various fruit trees, like mango, durian, langkong lansones, banana and many others (http://en. Wikipedia. Org/wiki/Bacolod,_Lanao_del_Norte).

d. Social Services

1. Utility Services

The barangay is being served by a water system company and an electric company. Local Water Utilities Administration (LOWA) serves as the main water system line that supplies the needs of the households while LANECO services the electricity of the place (Mrs. Balo).

2. Education

The barangay is served by a public school, the Binuni Elementary School and the Binuni Demologan High School (Mrs Balo).

3. Health

Binuni is served by one midwife whose duty is every Tuesday and Friday of the week at the Barangay Health Center. The nearest hospital is a private institution located at the poblacion of Bacolod (Mrs. Balo).

1.3 Purpose of the Study

The property in Binuni, Bacolod, Lanao del Norte has been used solely to produce copra from the coconuts that are planted in the property. The District has commissioned La Salle University (LSU) to assess how to maximize use of the property.

This study is conducted to ensure that the interventions are relevant and appropriate to the target property and community. The

questionnaire developed to assess the immediate community surrounding the property in Binuni aimed (1) to gather basic information on the socio-economic profile of the target community, (2) to determine the nature and type of short-term technical/vocational programs to be undertaken and (3) to draw out responses on the acceptability and probability of establishing a technical/vocational school in the area.

2. Methodology

2.1 Research Design

For the study to be conducted, the researcher used the following research design:
1. Descriptive Research Method – Description, recording, analysis and interpretation of the result of the survey.
2. Field Study – The researcher did an ocular inspection of the place and done on actual during the fielding of the earlier developed questionnaire.
3. The unit of analysis was the immediate community of Binuni, Bacolod, Lanao del Norte.

2.2 Data Collection

The study used primary data collection. Actual inspection of the place was conducted and the caretaker of the property interviewed to assess the security and physical development of the place. A questionnaire had earlier been developed to arrive the profile of the household community and determine the training development needs of the community in terms of technical vocational programs. This questionnaire had been pre-tested to establish its reliability.

2.3 Data Analysis

This research employed descriptive analysis, first, on all data gathered through the questionnaire; secondly, in forming judgment on

the professional opinion of agriculturist Edgar Colanggo of Rancho De La Salle regarding the Binuni property.

3. Results and Discussion

The results of the study conducted are presented in the following Tables and discussions.

Table 1 shows the Age Distribution of the Residents of Binuni, Bacolod Lanao del Norte.

Table 1
Age Distribution of the Residents of Binuni,
Bacolod Lanao del Norte

Age Bracket	Percentage
0-5 yrs	13%
6-12 yrs	23%
13-16 yrs	16%
17-21 yrs	7%
22-30 yrs	18%
31-40 yrs	14%
41-50 yrs	5%
51 yrs & above	4%

Based on the survey conducted among 35 households, with 180 total members, Table shows that the age range of 6-12 years old dominates the age range distribution of the respondents followed by 22-30 years old age bracket of 18%. It can also be gleaned from the Table above that the community surrounding the Binuni property is composed primarily of young children (36%), young adults (25%) and teenagers (16%). This young population comprises 77% of the total population of the immediate community surrounding the property under study.

Table 2 shows the Income Distribution of the Households in Binuni, Bacolod, Lanao Del Norte.

Table 2
Income Distribution of the Households
in Binuni, Bacolod, Lanao Del Norte

Income Bracket	Percentage
1-1,000	10%
1,001-2,000	10%
2,001-3,000	20%
3,001-4,000	3%
4,001-5,000	17%
5,001-6,000	10%
6,001-8,000	7%
8,001-10,000	13%
Over 10,001	10%

Table 2 shows that more than half (60%) of the households nets five thousand monthly. The Table shows that 90% of the households surrounding the property are below the poverty threshold of Lanao del Norte since per NSO poverty threshold statistics of 2004, the poverty threshold for the area is 12,414 which means that an average family of 5 members should have at least 5,172 monthly income to meet its basic food and non-food needs. The Table also shows that 60% of the households could not even meet the basic food and non-food needs for survival.

Table 3 shows the Source of the Income Households in Binuni, Bacolod, Lanao Del Norte.

Table 3

Source of the Income Households in Binuni,
Bacolod, Lanao Del Norte

Source	Percentage
Farming	42%
Private Employee	21%
Government Employee	26%
Self-employed	11%

Table 3 shows that farming (42%) is the major livelihood of the community in Binuni which is concentrated in coconut farming. The private employment derived by the households is in the form of construction work and NEC employment. The usual businesses undertaken in the area is in the form of beauty parlor, sari-sari store, machine shop, laundry service, fish vending, dress making, carpentry and driving pedicab.

Table 4 shows the percentage of the households that will avail of the technical-vocational programs in the event that it will be offered by La Salle University (LSU).

Table 4

Percentage Distribution of the Households that will
avail of the Technical-vocational programs

In Another Entity	In La Salle University
3%	97%

Table 4 shows that only 3% of the household interviewed are willing to take up vocational programs if offered by any other institution aside from LSU. The Table also shows a very positive attitude and acceptance of the community (97%) in the event that LSU would offer vocational programs. The Table shows that a good percentage of the households would prefer to avail of the services offered by LSU compared to the services of other institutions.

Table 5 shows the ranking of the technical- vocational programs according to the households' preferences.

Table 5
Technical-vocational Programs
Preferred by Households

Technical/Vocational Program	Rank
Computer programming	1
Commercial cooking	2
Caregiver	3
Auto servicing	4
Computer hardware servicing	5
Consumer electronics	6
Dress making	7
Culinary arts	8
Building wiring installation	9
Barangay health services	10
Driving	11
Beauty care	12
Agricultural crops	13
Food processing	14
Fish capture	15
Animal production	16
Massage therapy	17
PC operation	18
Aquaculture	19
Construction painting	20
Carpentry	21
Auto body painting finishing	22
Hair dressing	23
Tailoring	24
Bartending	25
Emergency medical services	26

Horticulture	**27**
Machining	**28**
Masonry	**29**
Tour guiding services	**30**
Baking pastry production	**31**
Plumbing	**32**

Table 5 shows that among the programs presented to the households for possible offerings, the most preferred by them is computer programming. They perceived this as basic for employment purposes since industries hire employees who are knowledgeable with computer programs. The next five felt need are commercial cooking, caregiver, auto servicing, computer hardware servicing, and consumer electronics.

Based on the ocular inspection by Mr. Edgar K. Colanggo, the property can be maximized into an agribusiness farm with the planting of grafted fruit tree seedlings and integration of field crops including beans, peanuts, and root crops and establishing vegetable garden; revival of the abandoned fishpond with the cultivation of tilapia; and, the rearing and raising of cows, horses, goats, pigs, chickens, and such livestock.

3.1 Financial Implications and Discussion

Assumptions:

1. The property should be fenced with concrete to assure the security of the animals that will be raised and crops that will be cultivated. In the event that equipment and machinery will be installed in the property, the concrete fence can deter would-be thieves. The estimated cost of the fencing, given only the information of its land area of 3 hectares, is estimated at P250,000 (Ms. Tan). The fence will only run on two sides of the property since one side is bounded by a mangrove area and the other side is bounded by the seashore.

2. Potable water system should be installed in the property. LOWA estimated P8,000 as the connection fee, including all the materials needed for installation and service fee. Afterwards, a monthly fee will be paid depending on the water consumption.
3. Electric water pump is to be installed at a cost of P7,000 (Br. Erguiza) to be used to facilitate the non-potable water needs of the property

3.2 Agribusiness Extension Farm of CBE of LSU

1. The initial grafted fruit bearing trees that may be planted in the farm include lemon, apple guavas, pomelo, rambutan, mango, lanzones, durian, avocado, jackfruit, marang, and pineapple (Mr. Colanggo).

2. Cattle, cows, goats, and horses will not yet be raised at this time due to the minimal availability of edible grass for them to feed on. The cultivation of these grass will have to be propagated and then the aforementioned animals may be raised and grown in the farm following the most profitable technology supervised and managed by the agriculturist of LSU (Mr. Colanggo).

3. The raising of pigs and chicken can be done anytime provided that the necessary structures are constructed for their maximum growth and development. The Rancho de La Salle has already developed the technology and means of raising them and has already gained profit from its operations. This can be replicated in the Binuni property (Mr. Colanggo).

4. The following the estimated cost involved in the conversion of the property to an agribusiness extension farm of the CBE of LSU: (Mr. Colanggo).

a. Initial Cost

Table 6
Grafted Fruit Tree Seedlings and other Farm Implements

Quantity	Particulars	Unit Price	Total Cost
10 pcs	Marcotted Lemon	30.00	300.00
10 pcs	Apple Guava	25.00	250.00
10 pcs	Grafted Pomelo	45.00	450.00
10 pcs	Grafted Rambutan	40.00	400.00
20 pcs	Grafted Mango	35.00	700.00
10 pcs	Grafted Lanzones	90.00	900.00
5 pcs	Grafted Durian	50.00	250.00
100 pcs	Smooth Cayenne Pineapple Crown and Suckers	2.00	200.00
20 pcs	Jackfruit		
10 pcs	Avocado		
15 pcs	Marang		
25 sacks	Organic fertilizer (from Hog and Chicken Bedding)		
1,000 pcs	Tilapia Fingerlings (Red Cherry and Jet Excel Variety)	0.60	600.00
	TOTAL		**4,050.00**

There is no cost assigned to the jackfruit, avocado, and marang since these sededlings can be acquired for free from the Department of Agriculture.

** *No cost is also assigned to the organic fertilizer in the sense that this is currently available in the Rancho de La Salle.*

b. Maintenance Cost:

1) The organic fertilizer that will be used for the farm will be coming from the ones developed by LSU in its Rancho de La Salle so it won't have any financial equivalent.

2) The cost of tilapia culture which will last for 5 months from stocking to harvesting is estimated to be about P3,500 for its food supplement and the necessary supplies for the maintenance of the pond.

3) The survival rate of the tilapia ranges from 80% to 90% depending on the surrounding conditions of its cultivation. It is assumed for this study that the survival rate is 85%. A conservative estimate of 5:1 (five fully grown tilapia is expected to yield 1 kilo) will be used in this study. So, at the end of a five-month period there will be 850 pieces of tilapia that will survive. A yield of 170 kilos can be sold at a farm gate price of P50.00 per kilo for a total sales of P8,500.00.

4. Summary, Conclusion, and Recommendation

Recommendations

The following are recommended by the researcher:

1) A cost-benefit study should be conducted to determine whether the putting up of structures and facilities and purchase of equipment will be worth the benefit to be derived from offering tech- voc programs.

This should be done since an earning and self-sufficient tech-voc school is not seen as feasible since a good majority of the household of Binuni is below the poverty threshold. Attracting enrollees outside the vicinity of Binuni is unlikely at the moment because of the condition of the road leading to the property. Getting the barangay to support financially the construction of the road is a distant possibility because the barangay has very minimal budget meant for the immediate needs of the barangay. Aside, the construction of the road where the property of the De La Salle is located is not a priority.

Another study that should be conducted is in terms of social and economic development of the community in order to determine that the interventions to be conducted by the institution will result in aforementioned of the households and that these actions done by the institution will not end up as a dole out intervention which is not beneficial to Binuni the community as a whole. Moreover, a 3-phase plan should be conceptualized institutionally before a decision is undertaken since it would involve a good amount of investment in terms of facilities and equipment.

2) The property can be maximized for agricultural purposes such as planting of grafted fruit bearing trees, integration of field crops including beans, peanuts and several root crops and cultivation of a vegetable garden, revival of the abandoned fishpond with the cultivation of tilapia; raising of cows, horses, goats, pigs, chickens and other livestock. In coordination with Mr. Edgar Colanggo, the Rancho de La Salle agriculturist, for the development and implementation of the farm plan. There should also be installed a water system whether through LOWA or an electric water pump for the immediate water needs in the property.

3) The property can be used as a recreational and reflective place for employees of the institution provided that the beach is constantly maintained to such as gathering of shells that are washed by the tide to the seashore. Additional cottages can be constructed at no extra cost since the property has nipa growing and the wood can come from available materials in the property.

Conclusions

The following conclusions are derived from the study:

1. The immediate community of the Binuni property is composed of a very young population (36%) which cannot yet avail of technical-vocational programs which will be offered by the institution. The other age bracket which comprises the 64%,

although interested in the technical-vocational programs may not be able to pay the appropriate fees that will be collected to defray the cost of offering the programs since a good majority of the households are below the poverty threshold.

2. The property can be utilized as an agribusiness farm extension of CBE of LSU based on the geographic property of the place and the existing natural and man-made structures. And, those that are not yet established can easily be constructed since the institution is equipped with the necessary manpower and technology.

3. The property is exclusive and quite distant from noisy and busy business centers. It is most appropriate for reflective activities and communion with nature. The property also is spacious and can accommodate institutional activities for recreation, picnics and recollections.

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The Health Problems of the residents of Sitio Opol: Basis for a Community Health Program

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Abstract

Opol, an islet, is one of the sitios connected to Catadman by means of a make-shift bamboo bridge. Twenty-six heads of families were interviewed for this study which aimed to obtain information on health problems related to drinking water, sanitation, and environment.

1. The Problem and Related Literature

Most countries in the world are faced with numerous and countless gigantic problems. These problems include political instability, economic crises, peace and order and declining state of health and sanitation. Health and sanitation as one of the concerns have moved almost all nations to try to come up with ways and measures to improve health and sanitation and life's quality conditions of their people. At the same time, nations have also tried to reduce environmental risks with supports and aids coming from international health organizations like the World Health Organization (WHO) (Fernandez, 2000).

The Philippines on its part through a series or a number of development programs exerted enormous efforts to remedy and solve its health and sanitation problems. For instance, street sweepers called metro aides have been assigned to clean the streets and garbage collection has been strengthened in all cities and provinces. Moreover, garbage disposal systems have been adopted to minimize water and air pollution. However, vehicles sadly continue to pollute the environment despite the anti-smoking belching laws and other related laws.

According to the WHO, the major health and sanitation problems are attributed to poor standards of hygiene, water and environmental pollution, ignorance of basic sanitary measures, and poor nutrition. The deteriorating and declining health and sanitation conditions have also been aggravated by wastes coming from various industrial establishments and households. Thus, if this scenario can not be remedied, it is sad to note that a grim future awaits the next generations. In fact, environmentalists have presented frightful images as to what will likely happen to mother earth and to humans as well when there is a continuous destruction of the ozone layer through pollution.

Review of Related Literature

Various literatures and studies have been conducted related to drinking water, sanitation and environmental-related problems which are reviewed in this study.

Water, sanitation and environmental-related problems and diseases are among the most significant health problems worldwide and nearly one billion slum dwellers lack access to safe and clean water for drinking and cooking (Commission on Sustainable Development 2004).

Water-Related Health Problem

No doubt water is really essential to life. It has even become one of man's prime commodities. It is vital to human existence and serves as a fundamental economic resource upon which survival and livelihood depend. Access to safe and affordable supply of drinking water is universally recognized as a basic human need for the present generation and a precondition for the development and care of the next. Without adequate and appropriate water facilities, diseases can easily spread through contamination (Philippine-Canada Local Government Support Program, 2001). Hence, care in handling drinking water is fundamental or else carelessness may cause hundreds of people to die every year.

According to a study on water-related problems, it has been found out that more than one billion people drink unsafe water and 2.4

billion, that is forty percent of the human race are without adequate sanitation. Furthermore, 3.4 million people, mostly children, die every year because of water-related diseases (www.who.int/inf-pr-2001-12.htm - 16k).

Reporting on the occurrence and incidents of water-related diseases, the WHO (2004) found out that diarrhea occurs world – wide and causes four percent of all deaths. Such disease can be spread by contaminated water. Thus, diarrhea is common when there is a shortage of clean water for drinking, cooking, and cleaning. Among the poor and especially in developing countries, diarrhea is a major killer. In fact, each year there are approximately four billion cases of diarrhea worldwide   (www.lboro.ac.uk/wellresource/fact-sheets htm/RSA%20Child%survival%2OEA.htm)

Further evidences indicate that aside from diarrhea, other drinking water-related diseases are the primary causes of childhood illnesses. In Kenya, for instance, majority of deaths among children under five are attributed to unsafe environmental living conditions. Malaria, upper respiratory infections and TB infestations are all leading contributors to child mortality and morbidity in Kenya (Sharm et al., 1996).

Sanitation Problem

Sanitation deals with cleanliness and proper hygiene. It is a science of preserving and protecting health. Sanitation involves proper containment and processing of human waste and wastewater until these are safe enough for release into the environment.

According to the Philippine-Canada Local Government Support Program (2001), sanitation continues to be a major concern not only among Filipinos but also worldwide especially among the poorer sectors. This problem is densely linked to issues and problems related to the policy, institutional, technical, financial, socio-cultural and economic environments.

Based on statistics, an estimated 2.9 billion people lack access to adequate sanitation services. Thus at any one time, 1.5 million people suffer from parasitic worm infection caused by human excreta and solid wastes in the environment.

In the Philippines, only sixty-nine percent of the population nationwide has sanitation facilities. In Metro Manila, about 900,000 or 7.67 percent of the population have access to safe sanitation facilities. This situation is attributed to many Filipinos not owning land and therefore being unable to provide their own toilets as revealed under the Philippine-Canada Local Government Support Program (2001),

Environment-Related Problem

Most often environmentalists and health authorities speak of environmental-related problems, particularly environment pollution. The solutions to such problems according to Gray (2006) are very vital since the survival and prosperity of children hinges on safe and healthy environment. Besides, children are uniquely susceptible to environmental risks and those risks do not respect boundaries.

In their studies Rukungan and others (2006), found that each year three million children under the age of 5 die in the world due to environmental-related illness. Environmental risks to children include unsafe water, poor sanitation and hygiene, indoor air pollution, exposure to toxic chemicals, injuries and accidents among others concluded WHO (2002).

Every country is facing problems related to environmental threats such as global warming and pollution from toxicants. Thus, developed nations like the United States are assessing the health effects of such hazards. Furthermore, progress toward reducing or preventing their effects has been monitored observed (Kjellstorm, 2004).

Conceptual Framework

This study is anchored on some studies made on health problems especially on drinking water, sanitation and environment. From these studies the variables are picked out.

The variables identified in this study were the drinking water-related problems, sanitation problems and environmental risks or problems.

The first variable identified in this study was the drinking water-related problems. Drinking water- related problems would refer primarily to water-borne diseases such as diarrhea and the so-called endemic diseases.

As reported by the UNICEF (2000), worldwide diarrhea claims the lives of two million children each year. About eighty to ninety percent of these cases are also due to environmental conditions, in particular inadequate water supply.

According to the World Health Organization (2004), diarrhea is a symptom of infection caused by a host of bacterial, viral and parasitic organisms most of which can be spread by contaminated water. It is more common when there is shortage of clean water for drinking, cooking and cleaning. Another possible cause is water contaminated with human feces from municipal sewage, septic tanks and latrines.

Aside from diarrhea, other drinking water-related problems are caused by endemic diseases. Endemic diseases such as Iodine Deficiency disorder (IDD), Kaschin-Beck disease (KBD), endemic fluorine poisoning and the Keshan diseases are seriously harmful to public health and the quality of population in heavily affected regions (www.acca21.org.cn/chnwpb.htm).

The second variable identified in this work was the problems related to sanitation. One of the problems related to sanitation is poor

waste disposal. This is one problem that is found to be related to poverty and lack of development (Rukungan, 2006).

In like manner, Dr. Neira (2003) added that problems related to sanitation are poor sewage systems and solid waste management which readily add to the risk of diseases in the slum areas or communities.

The last variable used in this study was the environmental–related problems. Environmental–related problems like pollutions have far reaching impact on health caused by rapid industrialization and industrial developments said Dr. Neira (2003). In fact, children around the world suffer disproportionately from exposures to environmental pollutions.

Problems caused by industrialization and industrial development are quite difficult to solve. However, to promote clean environment sanitary facilities are needed. These facilities range from simple but protected pit latrines to flush toilets (?) with sewage (esl.jrc.it/enwind/un_maths/UN_MEO 32. htm.).

These three variables identified as the health problems of the people in the slum communities are presented in Figure 1. From the findings of the study, a community health program would be evolved.
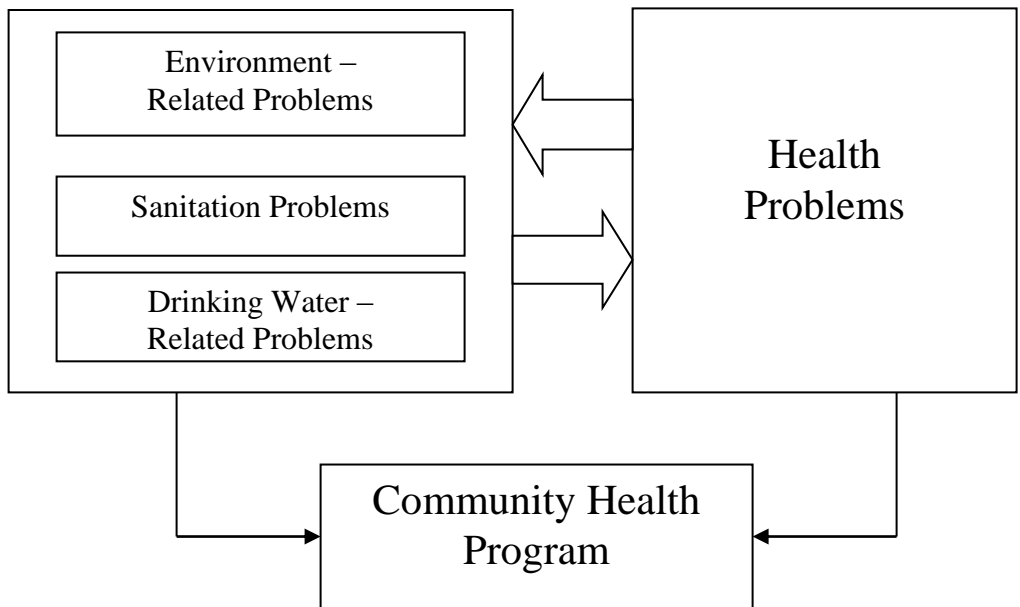
Figure 1: The Schematic Diagram of the Study

Statement of the Problem

This study aimed to find out the health problems related to the drinking water, sanitation and environment of the residents in Sitio Opol, Catadman.

Specifically, this research endeavored to answer the following queries:

1. What are the health problems of the residents of Sitio Opol?
2. What are the causes of the health problems of the residents of Sitio Opol?
3. Based on the findings of the study, what Community Health Program would be proposed for the improvement of the health conditions of the residents?

Significance of the Study

The relevance of the study lies on its usability in determining the water, sanitation and environment related health problems affecting the residents of Sitio Opol.

The results and findings of this work may be employed as a basis for framing a Community Health Program designed to solve the health problems of the sitio residents
.

Specifically, the findings of this research are important to the following end-users:

The Barangay and Purok/Sitio Residents.The results of this study would lead them to an awareness relative to the advantages of drinking safe water, sanitation and living in a dirt-free surrounding. Furthermore, through the findings of the study, the residents would be able to maintain quality of water from source to consumption.

The City, Barangay and Purok/Sitio Government Officials.. The findings of this study will increase their knowledge, skills and capacities at the city, barangay and purok/sitio level for planning, implementing, operating and maintaining water supply improvement as well as hygiene and health activities.

The City and Barangay Health Officials. The outcomes of this research will enlighten their minds in formulating feasible health programs designed to improve the health and sanitation of the people thereby minimizing environmental problems within the slum communities.

The Future Researchers. The results of this study may encourage other researchers to conduct further studies on the health problems of the people especially in the slum areas in the City of Ozamiz.

Scope and Limitation of the Study

This research dealt with the identification of health problems affecting the residents of Opol, Catadman particularly those which were related to water, sanitation, and environment during the school year year 2006-2007.

The respondents of this study were limited only to the forty families currently living in Opol, Catadman, Ozamiz City.

More importantly, there were three variables involved in this investigation: (1) problems related to water, (2) problems related to sanitation, and (3) problems related to environment

The instrument used in this study was primarily a self made-questionnaire. Through this instrument, the health problems of the community were identified.

2. Methodology

This chapter presents and describes the research design of the study, the research locale, respondents, sampling techniques, research instruments, data collection techniques and the statistical techniques used in the analysis of the obtained data..

Research Design

This study used the descriptive-evaluative method of research. The research utilized the descriptive method to identify the health problems related to drinking water, sanitation and environment of Sitio Opol, Catadman. Evaluative, on the other hand, was employed to identify the causes of such health problems. From the findings of the study, a functional Community Health Program would be evolved to improve the health of the residents of sitio Opol.

Research Locale

Opol is one of the sitios of barangay Catadman. It is an islet connected to Catadman by means of a make–shift bamboo bridge. One can have access to Opol during high tide by passing through this bridge. Opol is just a very small sitio and is inhabited by only a number of Subanen settlers.

The Respondents

The respondents of this study were the twenty-six heads of families living in Opol. Almost all of the respondents were Subanen who migrated to this area in Catadman. Most of the heads of the Subanen families were only laborers and tricycle drivers. However, a few of them did not have work. The mothers on the other hand, were mostly plain housewives. More pervasively, though the people were Subanen, they used Cebuano in their daily conversations.

Research Instruments

In obtaining the desired data, the following instruments were used:

1. Researcher–made Questionnaire was employed to obtain data and information on the health problems related to drinking water, sanitation and environment of the residents of sitio Opol. This researcher-made questionnaire was validated by asking fifteen non-respondents to answer the said questionnaire.

2. Informal interviews were done with the respondents and the barangay health officials specifically the barangay nurse to clarify some information related to the study.

Data Collection Technique

After the researcher-made questionnaire was pre-tested to a group of respondents other than the actual subjects of the study, it was then revised.

The revised questionnaires were then fielded to gather the needed data. The questionnaires were given to the forty respondents with the assistance of a group of Nursing students (Block 1) who enrolled in History 2n.

To clarify some responses of the respondents, informal interviews were resorted to. The barangay nurse and health workers were also interviewed to shed light on some data related to the study.

Statistical Treatment of Data

To have an accurate interpretation of the obtained data, frequency and percentage distributions were used to establish the profile of the respondents in terms of their health problems related to drinking water, sanitation and environment. Likewise, ranking was used to determine the most pressing problem of the respondents in their locality.

3. Results and Discussion

Health Problems of the Residents of Opol

Sitio Opol is one of the slum areas in Ozamiz City. Like other slum areas, it is not an exception when it comes to health problems. Table 1 shows the respondents' health problems.

Table 1
Health Problems in Sitio Opol

Health Problems	Rank
1. Water – Related	1
2. Sanitation - Related	2
3. Environment - Related	3
4. Other Health Problems	4

As reflected in Table 1, the health problems of the Subanen settlers in Opol were not different from those of other slum areas. Thus, the respondents ranked water-related problems first, sanitation-related problems second, and environmental-related health problems third. Their existence in such poor locality affects almost all dwellers. The study of Rukingan (2006) substantiates the result. According to her, such health problems are found to be related to poverty and lack of development in a certain area.

Causes of the health problems of the residents

A. Causes of Water–Related Health Problem

Table 2 shows the causes of the water-related health problem in Sitio, Opol.

Table 2
Causes of the Water–Related Health Problem(N=26)

Indicators	Respondent-Families			
Causes of Water-Related Health Problems	Affected		Not affected	
	No. of Respondents	Percentage	No. of Respondents	Percentage
1. Unsafe Drinking Water	20	76.92	6	23.08
2. Water-borne Diseases				
2.1 Diarrhea	15	57.69	11	42.31
2.2 Endemic Fluorine Poisoning	15	57.69	11	42.31
2.3 Iodine Deficiency Related Disorder	3	11.54	23	88.46

3. Other water –related Health Problems	10	38.46	16	61.54

As exemplified in Table 2, the causes of the water-related health problem were unsafe drinking water[in which 76.92% of the twenty-six families were affected], water-borne diseases like diarrhea and endemic fluorine poisoning which affected fifteen families, and iodine deficiency-related disorder which involved only three families. At one hand, there were also other related-health problems like stomachache and toothache which hit ten families.

Water-related health problems caused by unsafe drinking water and cooking which resulted to the prevalence of water–borne diseases was attributed to the unavailability of clean water in the area. During the interview, the "timoay" (leader of the Subanen residents in Opol) revealed that their only source of water was an old artesian well which was often flooded or inundated by the sea water during high tide.

Because of their unsafe drinking water, the timoay stressed that the children suffered from diarrhea, stomach pain, toothache and other related- problems. To this end, the barangay health nurse and barangay health workers encourage the entire residents of the affected area to boil their drinking water in order to kill harmful bacteria and remove impurities. Such testimony made by the timoay was verified by submitting to the City Health Office a water sample for testing. The test result showed that the water from the artesian well of the area contained some impurities like iron oxide due to its being old. Ergo, unsafe drinking water is the primary reason why diarrhea and endemic fluorine poisoning are prevalent diseases that often make the people of the sitio sick.

This finding is strengthened by the report made by the WHO (2004) that such diseases can spread through contaminated water especially when there is shortage of clean water for drinking, cooking, and cleaning.

Sanitation – Related Health Problem

Sanitation–related health problem is often experienced by people living in slum areas particularly the settlers in Sitio Opol, Ozamiz City.

Table 3 shows the causes of Sanitation- Related Health Problem in Opol.

Table 3
Causes of Sanitation-Related Health Problem in Opol (N=26)

Indicators	No. of Respondents Families			
Causes of Sanitation-related Health Problem	Families Affected	Percentage	Families not Affected	Percentage
1. Improper waste disposal	24	92.31	2	7.69
2. Improper waste water disposal	24	92.31	2	7.69
3. Non-observance of proper Personal hygiene				
3.1 washing hands before eating	23	88.46	3	11.54
3.2 changing clothes everyday	16	61.54	10	38.46
3.3 taking a bath everyday	6	23.08	20	76.92
3.4 cutting of fingernails	5	19.23	21	80.77
3.2 brushing teeth after meals	3	11.54	23	88.46
4. Diseases	5	19.23	21	80.77

As displayed in Table 3, the heaviest causes that confront the twenty-six families in Opol in terms of sanitation were improper

waste/sewage disposal and waste water disposal. On the other hand, among the problems concerning unsanitary personal hygiene, the brushing of teeth every after meal, cutting of fingernails and washing hands before eating were often neglected by most individuals of the twenty–six families. The rest of the causes of the sanitation related problem were taken by the people as minor problems.

Furthermore, the absence of sanitary toilets was the main reason of the existence of sanitation related-health problems. This finding is corroborated by the responses given by the respondents who said that they could not construct private comfort rooms since they were not allowed by the owner of the land (Development Bank of the Philippines) to build their own. The study conducted by the Philippine-Canada Local Government Program (2001) supported the finding. According to PCGP, sanitation-related health problems are attributed to many Filipinos not owning lands and therefore unable to provide their own toilets. Because of this problem, the residents of Sitio Opol were either using the sea as their sewage disposal system or covered their waste with the sand. They even moved their bowel only during night time.

On the other hand, the two families with private toilets did not even practice proper sewage and waste water disposal. Since people are helpless when it comes to solving such problem, it is not surprising why some of them particularly children who love to go swimming have contacted skin diseases like scabies. Furthermore, they also suffered from parasitic worm infection caused by human excreta and solid waste.

Environment – Related Health Problem

Environment–related health problem is said to have far reaching effects on people's health. Its solution is then vital to the survival and prosperity of the people.

Table 4 shows the causes of Environment- Related Problems in Sitio Opol.

Table 4
Causes of Environment - Related Problems in Sitio Opol(N=26)

Indicators	No. of Respondent - Families			
Causes of Environmental Problem	Affected	Percentage	Not Affected	Percentage
1. Improper garbage disposal	19	73.08	7	26.92
2. Dirty surroundings	15	57.69	11	42.31
3. Improper drainage	15	57.69	11	42.31
4. Air Pollution	5	19.23	21	80.77

As manifested in Table 4, more that half of the respondents (73.08%) suffered from improper garbage disposal due to the unavailability of trash cans. Besides, garbage collectors would not come to the area to do the collection of the garbage. Hence, people dispose or throw their garbage directly to the sea or bury them anywhere.

Secondary to improper garbage disposal was the dirty surroundings and improper drainage systems within the area. When the residents threw their garbage into the sea, according to one respondent, such items would be pushed back to the shore and then deposited under their houses during high tide. This environmental problem would also occur during heavy rains since Opol is susceptible to flood.

Because of the improperly disposed garbage, air pollution results causing health problems like TB, cough, and other respiratory diseases. According to Dr. Neira (2003), these environmental problems affecting the residents in Opol are also experienced by other developing countries.

Community health program

With the growing health problems involving water, sanitation and environment, almost all nations have attempted to come up with moves and measures that would work towards the amelioration of the quality of

life through improving people's health. At the same time, nations have also tried to reduce health risks by coming up with health projects that are directed towards achieving such goals or objectives.

In the case of Sitio Opol, in order to reduce the effects of the various health problems, the researcher has come up with a proposed community health program.

This proposed community health program "Limpyo Opol, Himsog Katawhan" will consist of a task force composed of different committee heads and personnel of Sitio Opol to help implement the said program. The program also proposes a series of poster making and stage plays to make the residents become aware of the proper methods of promoting water and environmental cleanliness as well as proper sanitation.

The proposed program will go through five stages, namely: the Task force creation and identification of committee heads and personnel and team building, Environmental survey, Planning and Preparation of Posters and Stage Plays, Operationalization, and Education.

4. Summary, Conclusions and Recommendations

This research aimed to identify and assess the health problems of the residents of Sitio Opol as well as their causes.

Involved in this study were the twenty-six heads of families who were residing in the subject sitio. The descriptive and evaluative methods of research were used. Moreover, to get the needed data, a researcher self-made questionnaire was utilized.

Summary of Findings

The obtained data generated the following findings:
1. The health problems existing in Sitio Opol were associated with water (especially drinking water), sanitation, and environment.

2. Among the causes of the water-related health problem, the most serious was the use of unsafe drinking water that affected most families (76.92%).
3. Due to the water-related health problem brought about by unsafe drinking water, the residents especially children easily got contacted with diseases and some disorders like diarrhea, endemic fluorine poisoning, stomachache, toothache and scabies.
4. A number of families (57.69%) suffered from diarrhea and endemic fluorine poisoning, which were two of the water–borne diseases which people were exposed to.
5. Improper waste/sewage disposal and waste-water disposal were the most significant causes of the occurrence of sanitation-related problems in Opol.
6. Improper personal hygiene was a minor cause of the sanitation related-health problem except the practices of not washing hands before eating, cutting the fingernails and wearing clean clothes everyday.
7. The foremost cause of environmental related-health problem was the improper garbage disposal which affected nineteen families (73.08%).

Conclusions

Based on the findings of this study, the researcher has come up with the following conclusions:

1. Among the three enumerated health problems of the families in Opol, water-related health problem is ranked first in terms of seriousness. Such existence is primarily brought about by the absence of clean water for drinking. Thus, most families are found drinking unsafe water taken from an old artesian well.
2. Improper waste or sewage disposal and waste-water disposal are the primary causes of the sanitation–related problem due to the absence of both sanitary public and private toilets.
3. Improper garbage disposal, being one of the sources of the environment-related health problem, has greatly polluted the surroundings of the sitio since families do not have trash bins.

4. People in Opol are practicing personal hygiene except washing hands before eating, wearing clean clothes everyday and cutting their fingernails regularly.

Recommendations

Based on the findings and conclusions made, the following recommendations are given:

1. Primary Recommendations

1.1 To remedy or solve the health problems of sitio Opol which are related to water, sanitation and environment, the city government as well as the Sanguniang Barangay of Catadman, where the said community is situated, should strictly implement the health programs by:
- constructing more public toilets
- providing more garbage bins
- collecting garbage waste regularly
- digging drainage canals
- campaigning for sanitation and cleanliness and educating families as to their roles and responsibilities in promoting health and sanitation in their own households and through out the whole purok.

1.2 Barangay Officials with the barangay doctor, nurse and health workers must work together in encouraging and motivating further the settlers to be directly involved in maintaining health and sanitation in the sitio. This can be done or made possible by making the residents aware of the proper ways of handling their drinking water and by observing personal hygiene and clean environment. This action would readily ensure water safetiness free from harmful substances thereby promoting good health among the residents.

1.3 The proposed community health program be carried out through the assistance of both the city government and the sanguniang barangay officials.

2. Secondary Recommendations

For future researchers whose interest may fall within the scope of the current study, the following topics are also recommended:
1. Assessment of the Sitio Opol Community Health Program, three months after its implementation.
2. Assessment of the Effectiveness of the health projects of the City Health Office in Sitio Opol.

COMMUNITY PROGRAM:
LIMPYO OPOL: HIMSOG KATAWHAN
Operational Structure

Program	Objective (s)	Persons Involved	Budget	Time Frame	Progress Indicator (s)
1. Creation of the Task Force	1. Create the most important body (Task Force) that will take charge and oversee the overall implementation of the community program, the "Limpyo Opol: Himsog Katawhan" 2. Identify the potential members of the Task Force. 3. Assign particular task to the chosen members of the Task force.	Members of the Sangguniang Barangay of Catadman; Sitio Opol's officials; Health Doctor, health nurse and BHW workers of Catadman;	To be taken from Brgy. Catadman's budget	1st week of November'07	A Task force will be created that will be composed of Catadman's Sanguniang officials, barangay's health officials and health workers and Sitio Opol's officials.
1.1 Creation of Program Committees	1. Identify and create the various committees that will facilitate the	Members of the Sangguniang Barangay of Catadman;	Brgy. Catadman's budget	2nd week of November' 07	The different program committees are created such as: a. committee on

	successful implementation of the program/project and which will assist the Task Force. 2. Elect dedicated, hardworking and knowledgeable individuals for membership to the various created committees.	Sitio Opol's officials; Health Doctor, health nurse and BHW workers of Catadman;			planning and preparation of posters and stage plays; b. committee on technical matters; c. committee on financial matters d. committee on information dissemination e. committee on evaluation;
1.2 Organization	1. Create and come-up with the organizational structure of the project " Limpyo Opol, Himsog Katawhan". 2. Explain the organizational structure of the project/program for the members to identify their respective roles.	Officers of the Task Force	Brgy. Catad man's budget	3rd week of Novemb er'07	A well - prepared organizational structure of the program exists and posted in the barangay hall. Members of the Task force and of the various committees know well their responsibilities and are performing well based on the organizational structure.
1.3 Team-Building	1. Carry out activities that will promote unity and team-building among the group members of the different	Officers of the Task Force; Members of the different program committees;	Brgy. Catad man's budget	Last Sunday of Novemb er'07	Harmonious and good working relationship among the various committees and the

	committees and of the Task Force through seminars or inviting resource speakers who will speak on the topic.				members of the Task Force.
2. Environmental Survey	1. Make an actual/ocular survey to see for themselves the sanitation, drinking water and environmental conditions of Sitio Opol. 3. Interview residents of Opol and solicit comments /suggestions regarding the sanitation, drinking water and environmental concerns.	Officers of the Task Force; Residents of Opol.	None	1st & 2nd Saturdays of December'07	Task force members and residents of Opol become aware of the existing health problems that are related to sanitation, drinking water and environment.
3. Poster-Making and Stage Plays **3.1 Planning and Preparation for Poster-Making and Stage Plays.**	1. Formulate and discuss the criteria and mechanics for the poster making and script making for the stage plays 2. Explain the theme that will serve as the basis for the	Committee on Planning and Preparation for Poster-making and Stage plays	Brgy. Catadman's budget	Whole month of January' 08	Well – prepared/made posters are displayed at strategic areas for people to see or view. Well written scripts are submitted to the committee on planning and

	poster making and the script making for the stage plays. 3. Assign members of the Committee to gather all posters and scripts made/written for suggestions or revisions.				preparation of poster-making and script-writing for the stage plays.
3.2 Display of Posters and Stage Plays	1. Display the collected posters at strategic places that could be easily viewed by the residents of Opol and of the whole barangay Catadman 2. Present a series of stage plays to develop the awareness on the part of the people of Opol on the importance of good sanitation, safe drinking water and clean environment 3. Through the stage plays, depict real life situations relevant to sanitation , safe drinking water and the need for clean environment.	Committee on Planning and Preparation for Poster-making and Stage plays Residents and selected actors and actresses from Catadman and Opol.	Brgy. Catadman's budget	Whole month of February'08	Residents will be strongly motivated to extend their helping hands to the barangay officials in solving their sanitation, drinking water and environment related health problems rather than to simply wait for their local officials to do the work for them. Opolanons who feel and who are fully aware of the importance of good/clean sanitation, drinking – water and environmental conditions as the result of the posters that they have seen

	4. Stir the imagination, awareness and emotions of the residents as to the need for proper sanitation, drinking safe water and maintaining a clean environment			and stage plays witnessed.
4.Operationali zation, Dissemination and Orientation/E ducation	1. Meet the residents of Opol for orientation as to the goals and projects of the government and that of the barangay council as well that are designed to solve the various sanitation, water and environmental related health problems. 2. Discuss with the residents all the posters received/submitt ed; at the same time explain what the plays are all about. 3. Educate and re-orient the Opolanons as to the health rules and regulations related to sanitation, drinking water	Members of the Task Force and the members of the Committee on Posters and stage Plays		1st and 2nd Sundays of March'0 8	Well – disseminated and understood goals of the city government as well as of the sanguniang barangay of Catadman. Well-informed and oriented people as to importance of sanitation, drinking safe water and clean surroundings.

	and environment.				
5. Program's Evaluation	1. Find out whether the goals or the objectives of the program/project are achieved. 2. Evaluate the working relationship among the members of the Task force and the different committees involved in the implementation of the program. 3. Find out how effective was the creation of the Task Force as well as the different program committees. 4. Examine the strengths and weaknesses or the areas of the program that need to be improved or enriched. 5.. Assess the impact of the program on the awareness and education of the residents of Opol as to the sanitation, drinking water and	Members of the Task Force Members of the different program committees Residents of sitio Opol.	Brgy. Catad man's budget	April'08 up to May' 08	Well-implemented program. Health conscious residents of sitio Opol and of barangay Catadman in general.

environmental conditions of their sitio and their responsibilities or role in solving such concerns. 6. Find out if after the implementation of the project, the health conditions of Opol which are related to sanitation, drinking water and environment have greatly improved.				

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