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# EFFICIENCY OF PROJECT SIMPLE: A PERCEPTION OF THE ICT COORDINATORS, SCHOOL HEADS AND TEACHERS

**Melissa S. Sanchez, PhD**
Division of Pampanga
E-mail: melissa.sanchez003@deped.gov.ph

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**Abstract:**

This study presents the perception of the Information and Communications Technology (ICT) Coordinators, School Heads and Teachers on the efficiency of Project SIMPLE along with the challenges and opportunities related to its implementation through a SWOT Analysis. Data were collected from purposively selected 300 ICT Coordinators, 40 School Heads and 30 Teachers using Google forms. Based on the results of the study, easier access to personnel information, organized and paperless updating of data, and on-time release of claims and benefits are the strengths of the Project SIMPLE. Poor internet connection or no connectivity at all, lack of knowledge on ICT and on the Project SIMPLE of teachers, usability features of the SIMPLE application used, and errors in data entry and difficulty in data collection were identified as the major weaknesses. On the other hand, they believed that Project SIMPLE should encourage more cooperation among stakeholders for efficient and updated data collection, consider expanded accessibility of the SIMPLE app and database by the schools, possibility of upgrading the features of the app and improve information dissemination on Project SIMPLE including capacity building features for its users. The respondents considered hacking and insecurity of data is a serious threat to Project SIMPLE among factors such as human error. Possible threats are also change of administration and unavailability of funds to sustain the project.

**Keywords:** Project SIMPLE; ICT; Governance;Tarlac Province;Fourth Industrial Revolution.

## 1.INTRODUCTION

Education plays a vital role in the progress of any nation. The provision of basic and accessible education is mandated to the Department of Education which oversees the primary and secondary schools all over the country. These ardent but challenging tasks that are embedded in the duties and functions of the agency are being carried out by its different bureaus down to the school level.

The schools both in elementary and secondary levels under the Department of Education take the lead role in promoting literacy by ensuring greater access to education. The teachers serve at the forefront in implementing the educational program and policies of the DepEd. However, David, Albert & Vizmanos (2019) noted that the workload of public school teachers is not just limited to teaching. Teachers also have various additional administrative or student support roles that are assigned to them and these demands multi-tasking among teachers. A responsive information management system would help the teachers to effectively manage their time especially when they are required to submit their personal data relative to processing their incentives, career advancement, among others.

Information and Communications Technology (ICT) is regarded as one of the vital tools in sustainable development and in enhancing delivery of services to any government agency, hence the term e-governance. Joshi, Meza and Rayamajih (2013) stressed that ICT can make a significant contribution to the achievement of

good governance goals. Moreover, e-governance also hopes to build trust and confidence among the citizens and reduce red tape as the resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.

In his message (in E-GOVERNMENT MASTERPLAN 2022), President Rodrigo R. Duterte stated that it is imperative that our ICT policies and programs are able to streamline social services for the benefit of our people. Moreover, the use of electronic media for public administration services reduces many of the existing problems associated with paper-based methods for data collection. The most common problems to be addressed are loss of paper, destruction of data, and inconsistent data entry. The move towards paper reduction is not a panacea in itself, but it provides a platform where various constituents can interact with the government in an online environment. Some argue that without a paper trail, there can be a lack of accountability as well as the non-existence of a back-up mechanism if the electronic system fails (Joseph & Kitlan, 2008).

As the education system of the Philippines face the demands and challenges posed by the Fourth Industrial Revolution (FIRe) or Industrial Revolution 4.0 partnered with the several challenges faced by the public school teachers, the Schools Division Office (SDO) of Tarlac Province continuously create innovations as "fusion of technologies blurs the lines between physical, digital and biological spheres" (Schwab, 2016 in Dadios et al., 2019). This is made possible through Project SIMPLE, which stands for **S**implified **I**nformation **M**anagement **P**roces towards **L**eadership **E**mpowerment. The project was primarily designed in 2018 to establish a viable system through the use of ICT that is believed to complement, accelerate progress, and enable transformation in the education sector, to include its bureaucracy. The project aims to address the following issues: Centralization of data; Hardware infrastructure limitations; Network infrastructure limitation, and Internet Connection.

Nevertheless, it is guaranteed by the Schools Division of Tarlac Province that these issues would be addressed through Project SIMPLE wherein transactions would be ICT-mediated database system. Project SIMPLE would engender efficiency in the delivery of services to its employees through enhanced utilization of ICT. It aims to create database for easy searching and retrieval of documents, integrate system for requesting, processing, and approval of documents, and provide a system that could be accessed over the internet to minimize the time needed in requesting and processing of documents.

Therefore, the project would not just facilitate the agency's responsiveness to the needs of its employees such as in processing documents needed in updating employees' database for ranking, promotion, or claim of incentives and benefits, among others. This innovation would also pave the way for facilitating better time management, particularly to the teaching force as it would lessen their time devoted to submit the required documents for a particular program of the agency. Moreover, this would help address the issue on overworked teachers which has been one of the challenges posed with the government's thrust in making education system at par worldwide in consonance with Republic Act No. 10533 (Enhanced Basic Education Act of 2013).

It is the commitment of the current administrators of SDO Tarlac Province to "perform their assigned tasks with integrity, imagination, and optimism – to bring change where this is needed, expertise where this is missing, and leadership where this is wanting." These are the very words uttered by Career Executives as part of their loyalty and devotion, thus the same principle of governance applied in DepED Tarlac. Believing that "governance" as a term means to steer as was used for the first time in a metaphorical sense by Plato, the sense of direction that SDO Tarlac is heading to is towards working smart with technology by automating business processes. One best way to do the same is to employ e-governance. World Bank defined e-governance or eGov as "the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens businesses, and other arms of government."

Computerizing the bureaucratic and routine towards better decision-making is the key idea in conceptualizing Project SIMPLE. Since it meant doing something new which the organization is not good at, it employed outsourcing both application services and IT infrastructure services. Application services included application development with hosting and maintenance. An app was developed and was called the SimplePds App. This app was given to all the school ICT Coordinators for installation in their laptops or desktop computers and served as the repository of the data of individual permanent employee of their schools. Consolidated data was submitted by each school through a folder bearing their school ID and the name of school. All the instruction for the process was disseminated through SIMPLE workshops conducted for that purpose. Series of workshops dedicated to capacitate the key players of Project SIMPLE were conducted on November 2018 (Module 1) and on January 28 to February 1, 2019 (Module 2). The Schools Division Office of Tarlac conducted said workshops tailored for ICT coordinators and Secondary School Administrative Officers to enhance their knowledge and skills in addressing issues on data management. (Division Memorandum Nos. 308, s. 2018 and 31, s. 2019). The goal of the two-module program was to create a database for easy searching and retrieval of documents for end-users –

school heads and teachers. As for the Schools Division Office, it aimed to integrate system of requesting, processing, and approval of documents. It also targeted to provide a system that could be accessed over the Internet to minimize the time needed in requesting and processing of documents. Further, it also aimed at providing good quality printed output of documents and providing a reliable system where files are always backed-up and never allow unauthorized access.

## 2.LITERATURE REVIEW

### 2.1 ICT IN GOVERNANCE

The world is once again experiencing another industrial revolution (PIDS, 2019). However, while the three earlier revolutions have generally revolved around physical production and its advancement, the Philippine Institute of Development Studies or PIDS acknowledges that the Fourth Industrial Revolution (FIRe) has blurred the lines among the physical, digital, and biological spheres. It has disrupted almost all industries across the globe, covering the entire systems of production, management, and governance.

According to Homburg (n.d), ICTs in government has moved from being a peripheral concern, to a topic that concerns the core activities of government, policy making and policy implementation, and that e-government is intrinsically linked to transformation and reform of governments.

The use of ICT in government is seen as an enabler for nations to achieve digital transformation in the delivery of basic services. (EGMP 2022; page 2) Moreover, it is stated in the National ICT Ecosystem Framework (NICTEF, 2019) that ICTs have brought tremendous developmental benefits to the Philippine society. With the dawning of the Fourth Industrial Revolution, marked by the rapid pace of technological changes transforming economic and social systems, digital divide continues to grow wider at an even faster rate.

Gilbert, Balestrini, & Littleboy (2004), in Joseph & Kitlan (2008), pointed savings of time and money as two of the most important factors to predict potential usage of e-government services. In the area of public administration, all sectors can benefit from reduced costs and time efficiencies. Improved governance and increased accountability is possible through the inclusion of societal participants in the major activities of governments (Ackerman, 2004). E-government provides the tools for increasing transparency in public administration.

Improved governance and increased accountability is possible through the inclusion of societal participants in the major activities of governments (Ackerman, 2004), in Joseph & Kitlan (2008), E-government provides the tools for increasing transparency in public administration.

### 2.2 CHALLENGES OF ICT IN GOVERNANCE

There is no doubt on the "efficiency, effectiveness, speeding up of work processes, lightening of bureaucratic paperwork, satisfying public demands, etc." ICT can do all these for government but these entails "the dynamic nature of ICT influencing the 'rules of the game', whether that means the rules that apply to the interaction between government and the citizen, between different government organisations, or between government and private parties." These processes dawns its effect on social interactions thus reducing the humanitarian aspect or harming humanity without technology being aware of its harmful effects. "New information flows also create new social and policy-related realities that have repercussions for citizens and for the authorities themselves." "Government must therefore find a way to navigate between two contrasting demands: using ICT innovatively in policy and policy implementation, and protecting citizens against the foreseen and unforeseen effects of ICT" (Prins et al., 2011).

In an earlier research by Fahnbulleh (2005), in Joseph & Kitlan (2008), numerous potential barriers related to the implementation of e-government were identified: Concerns about inadequate security and privacy of data, Unequal access to computer technology by citizens, High initial costs of setting up an e-government solution and Resistance to change.

Income, age, and education are all contributing factors that can result in resistance to the use of e-government initiatives. Further, innate personal characteristics, such as dogmatism, can work to increase an individual's resistance to change. If there is a great preference to maintain the existing status quo, then there is a greater likelihood that resistance to new methods of operation will persist. Long-term employees may be particularly susceptible to this problem, since they may have completed tasks the same way for many years (Joseph & Kitlan, 2008).

Roy & Karforma (2011) noted that e-governance is one of the main targeted sites where tampering of information can be done by active attacks. An example is the "ILoveyou Virus" in the year 2000. Intruders can

modify the system and can steal valuable information or data thus exposing the agency to theft and manipulation. Thus, PINA has to be exercised all the time by concerned authorities to ensure successful functioning of E-Governance. Experts in IT are often the culprits who can manipulate the system. This is now classified today as one of the cybercrimes committed. Threat to the governmental agencies are citizen impersonation, ping of death (sending large number of data packets to E-governance server) that can cause crash down or reboot or hang, teardrop exploits the vulnerability present in the reassembling of data packets, another is intranet associated threats which uses the internet technologies to facilitate information sharing within the organization (internal hackers are more troublesome). There are many other forms of attack such as Brute Force attack, Boomerang attack, Davies attack, Birthday attack, Related-key attack, Slide attack, Meet-in-the middle attack, XSL attack, etc.

Ostriz (2018 in Dadios et.al, 2018) stressed that an important aim should ease the transition costs from one work engagement to the next. This statement would enhance real-time monitoring of the status of employees as data management through the use of ICT would be readily accessed by both the employees and the administration of the Schools Division Office of Tarlac Province.

In the end, teachers are meant to facilitate learning. As such, they should be models of lifelong learning, especially given the impact of emerging technologies of the Fourth Industrial Revolution on the vastly changing job market and the future skills required of the country's workforce (Albert et al. 2018b in David et al, 2019).

## 3.METHODOLOGY

Data were collected from selected 300 ICT Coordinators, 40 School Heads and 30 Teachers using Google forms. From the data collected, SWOT analysis was used to determine the strengths, weaknesses, threats, and opportunities in relation to Project SIMPLE from the perceptions of the participants composed of ICT coordinators, Teachers and School heads in the Schools Division of Tarlac Province. Despite its popularity in the field of business, SWOT analysis is also used in government entities and nonprofit organization in analyzing and assessing initiatives, products or projects.

The survey obtained feedback aimed at continuously improving the service delivery of SDO Tarlac Province employing SIMPLE as a strategy. It was conducted online in July 2019 within a one-month time frame, where data were gathered using purposive sampling based on the following general criteria:

- ICT Coordinators who attended the 2-module program who were tasked to be in charge of data consolidation for individual schools
- School Heads from different type of schools – small, medium, and large schools
- Teachers with permanent status

After participants were identified they were formally sent invitation to answer the survey online answering their feedback on the following internal and external factors: (1) Internal Factors
(a) Strengths – the best that Project SIMPLE offers that benefits teachers, school heads, and DepEd Tarlac Province as a whole and (b) Weaknesses – everything that prevents Project SIMPLE to offer growth and improvement; (2) External Factors (a) Opportunities – possible updates and creative solutions to improve Project SIMPLE and (b) Threats – external factors which are potential threats to Project SIMPLE.

The anonymous nature of the process as well as the freedom to answer in their preferred language allowed the participants to submit their different opinions and make critical comments without being identified to ensure authentic and genuine responses to be obtained.

Responses were content analyzed and summarized based on the emerging themes aligned to the objectives of the study.

## 4.RESULTS AND DISCUSSION

This research focused on identifying the improvement areas and priority needs for continuously improving Project SIMPLE as it is a means of realizing SDO's thrust to automate business processes, one of its strategic directions, in order to achieve dramatic improvements in key performance indicators such as quality, service and speed.

The findings of the study provide a discussion on the four main areas of Project SIMPLE implementation1) Strengths – the best that Project SIMPLE offers that benefits teachers, school heads, and DepEd Tarlac Province as a whole and (2) Weaknesses – everything that prevents Project SIMPLE to offer growth and improvement; (3) Opportunities – possible updates and creative solutions to improve Project SIMPLE and (4) Threats – external factors which are potential threats to Project SIMPLE.

## 5.STRENGTHS

The best that the Project SIMPLE offers representing its strength were three main areas: (1) Easier Access to Personnel Information, (2) Organized and Paperless Updating of Data and (3) On-time Release of Claims and Benefits (see Table 1).

Project SIMPLE has centralized all the data of both the teaching and non-teaching personnel of DepED Tarlac Province. This allowed for the office to have an updated data on all personnel. This was made possible by the fact that the SimplePDS App was based on the contents of the Personal Data Sheet (CSC Form 212 Revised 2017). The database as collected was further subjected to data validation utilizing various data sources from other agencies including the Regional Payroll Services Unit (RPSU) and data on the plantilla items under the Department of Budget and Management (DBM). Secondary data were likewise consulted to ensure that data as collected is accurate, valid, and updated. Project SIMPLE was successful in creating a database with accurate data on employee number, personal information, updated data related to GSIS, Pag-Ibig Fund, Philhealth, Tax Identification Number (TIN), and other pertinent information required from time to time from the employees. The unified system made it easier for each of the units of the office to have complete data of the employees thereby making it unnecessary to retrieve data from schools from time to time. This also allowed for cleaning the database ensuring that data are unique and no duplication for an individual employee.

Since data has been organized and updated, this allowed for slowly transitioning to paperless transaction such as in the lessening of voucher preparation. Vouchers for the benefits and bonuses of teachers are swiftly processed through the counterchecking of the data generated by the SIMPLE unit. Processing time previously takes two days in the Accounting Unit instead of five to seven business days processing time before. This resulted to on-time release of personnel salaries and benefits and updated payment of claims.

## 6.WEAKNESSES

Weaknesses represent everything that prevents Project SIMPLE to offer growth and improvement. There were four main weaknesses that were identified: (1) Poor Internet Connection or No Connectivity At All, (2) Lack of Knowledge on ICT and Project SIMPLE by Teachers, (3) Usability Features of the SIMPLE App Used and, (4) Errors in Data Entry and Difficulty in Data Collection (see Table 1).

One of the major challenges of Project SIMPLE is the poor internet connection in the schools. Unstable internet connection affected the retrieval of data from the ICT Coordinators. Some schools especially from the far flung areas like schools in the mountain areas have no internet connectivity at all which made the process more challenging for the end-users. This was further aggravated by the fact that most teachers lack knowledge on ICT. Due to budget constraint, only ICT Coordinators and selected School Administrative Officers/Registrars/Records Officer in the secondary level were part of the training for the project. This therefore required those who were trained to echo the training to their colleagues in the school. Respondents thought that guides must be provided as part of the project implementation since other teachers do not understand the program and lack knowledge on the use of ICT. This fact contributed to some of the teachers having difficulty in using the SIMPLEPds App further contributing to the errors in data entry and in delayed submission of data thereby affecting the timeline in data collection by the Division SIMPLE Unit.

## 7.OPPORTUNITIES

Opportunities are the possible updates and creative solutions to improve Project SIMPLE. There were four main opportunities according to the participants: (1) Cooperation Among Stakeholders for Efficient and Updated Data Collection, (2) Expanded Accessibility of the SIMPLE App/Database by the Schools, (3) Feature Upgrades for the SIMPLE App and, (4) Information Dissemination and Capacity Building on Project SIMPLE (see Table 1).

Areas for improving Project SIMPLE according to the respondents include cooperation among stakeholders. Proper coordination between the School Head, LIS Coordinator, ICT Coordinator and Focal Persons in-charge of each of the clusters in the SIMPLE Unit at the SDO is necessary to ensure that data that are valid, accurate, and updated are collected. Monthly updating of the database is deemed necessary so that errors will be minimized implicating personnel salaries and benefits. External partners may likewise be tapped so that issues on data security may be avoided ensuring the organization's compliance to the Data Privacy Act (DPA).

At present, the database is accessed by key officials and Unit Heads in the SDO but the same is not yet available to be accessed by individual schools. Mechanism for individual access to the database by the schools is a way forward to enable downloading of their own data by the personnel. Expanded accessibility which can be reached whether as online mode or offline mode in the office is an improvement that end-users look forward to.

Aside from access, feature upgrades including editing facility through a mobile phone is likewise an opportunity end-users are looking into. Linking the database to seminars and service records to automate updating of individual records is also suggested. Printing feature is available at the division office but not yet to the schools. The SIMPLE App is promising since many feature upgrade may be added to allow for expanded usability features.

Further trainings and workshops on the Project SIMPLE is also requested by the teachers and school heads. Information dissemination should not also be limited to the ICT Coordinators but should also cover teachers and school heads who are part of the end-users of the project.

## 8.THREATS

Threats are external factors which are potential threats to Project SIMPLE. There were four main possible threats identified by the participants: (1) Hacking and Insecurity of Data (2) Human Error, (3) Change of Administration, and (4) Unavailability of Funds.

Security of data is a major concern not only of the end-users but especially by the proponents of Project SIMPLE. Since information is a critical asset, protecting this is critical component of a database management system. Based on the research done by American National Infrastructure Protection Center (NIPC) in 2000, there is an increasing rate of continuous attacks on U.S. e-commerce system. Data collected should always be protected especially for a data collection process as huge as DepED Tarlac involving over 9,000 personnel for more or less 500 schools. Hacking, illegal use of data, leakage of confidential information, and lost data are just few of the concerns facing the project. Suggestion that a personal computer (PC) storage should be in place as data back-up is a countermeasure employed by DepED Tarlac. IT Infrastructure services include IT security, database administration, and help desk thus the creation of the SIMPLE unit headed by the Division ICT Coordinator. This aims to minimize the implications of human error which can range from personal information of personnel being linked to other persons, erroneous data entry, data unverified and not confirmed, misinformation and wrong updates, abuse of records in violation of the DPA, and improper database management among others.

In July 2019, DepEd issued DepEd Order No. 16, series of 2019 announcing the amendment of the policies on the selection/appointment and transfer/reassignment of regional officials including Schools Division Superintendents and Assistant Schools Division Superintendents. This simultaneous transfer poses a threat on the Project SIMPLE being sustained by the Division Office. Should the new administration plan to institute change on database management system, it is probable for the project to be less prioritized if not eradicated at all.

Capacity building as well as any related activities towards sustaining Project SIMPLE would require funds. Unavailability of the same would likewise pose a risk to the program. Addressing funding requirements is therefore a specific concern to maintain an information management process such as the Project SIMPLE.

## 9.CONCLUSION

E-governance efforts such as Project SIMPLE proved to have been beneficial in so far as data collection, verification, validation, and updating is concerned. This was felt through timely release of claims and benefits of personnel, paperless transactions, and easier access to personnel information. This proved to have saved time, financial and human resources allowing the institution to focus more the time of teachers in instruction and the time of school heads in observing classes and providing technical assistance on instructional leadership. Financial resources are saved since there is no need to print so many vouchers for individual schools as was practiced before. Human resources are maximized since the automation of some business processes has been started cutting short processing time from 7 days before to just 2 days.

Project SIMPLE is still considered a babe for the last few months that it has been conceived. Further improvements are yet to be added in so far as its feature is concerned not to mention other challenges such as internet connectivity, threats on data security, and the need to capacitate human capital to equip them to ensure full integrity on information management, thereby minimizing human error.

Amidst the threats, glimpse of opportunity is seen through cooperation of stakeholders of the DepED Tarlac Province along with other stakeholders towards improved efficiency in data collection and updating as well as in the possibility of upgrading the features of Project SIMPLE as a viable tool in empowering education leaders through a simplified information management process.

**Table 1:Strengths of Project SIMPLEas Perceived by ICT Coordinators, School Heads, and Teachers**

| Strengths | Weaknesses |
|---|---|
| • EASIER ACCESS TO PERSONNEL INFORMATION<br>• ON-TIME RELEASE OF CLAIMS AND BENEFITS<br>• ORGANIZED AND PAPERLESS UPDATING OF DATA<br>• AUTOMATED PROCESSING OF BENEFITS | • POOR INTERNET CONNECTION OR NO CONNECTIVITY AT ALL<br>• LACK OF KNOWLEDGE ON ICT AND PROJECT SIMPLE BY TEACHERS<br>• USABILITY FEATURES OF THE SIMPLE APP USED<br>• ERRORS IN DATA ENTRY AND DIFFICULTY IN DATA COLLECTION |
| **Opportunities** | **Threats** |
| • COOPERATION AMONG STAKEHOLDERS FOR EFFICIENT AND UPDATED DATA COLLECTION<br>• EXPANDED ACCESSIBILITY OF THE SIMPLE APP/DATABASE BY THE SCHOOLS<br>• FEATURE UPGRADES FOR THE SIMPLE APP<br>• INFORMATION DISSEMINATION AND CAPACITY BUILDING ON PROJECT SIMPLE | • HACKING AND INSECURITY OF DATA<br>• HUMAN ERROR<br>• CHANGE OF ADMINISTRATION<br>• UNAVAILABILITY OF FUNDS |

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