

## Improving Quality of Higher Education Using Academic Information System as a Public Administration Service: The Case of Indonesia

Didin Muhafidin<sup>1</sup>

### Abstract

Information Communication and Technology has made a lot of investments to the rapid transformation of modern society. The goal of the study was to establish a highly customized student information and accounting system in Indonesia to promote the enrolment and accounting phase and to meet the needs of all clients and employees in the provision of line services. This study applied the context of Computer Science Research for Information Systems, while describing the problems faced in the enrolment and accounting phase, specifying the analysis purpose, planning and implementing the program, installing and testing it, and reporting the results of the study. The digitalized enrolment system works in numerous computer units over a system with a shared database for data storage. It has distinct embedded features that promote the needs of frontline service providers and customers. The aggregate feature of the enrolment system has increased the efficiency of the frontline providers, as most of the processes are automated and computerised. The results of the survey, along with service quality, precision of documents and records and promptness, demonstrate that the enrolment system is significant and effective instrument for delivering front-line services. Hence, improving the quality service of higher education institution in Indonesia through system development will provide better services offered to clientele.

**Keywords:** *Enrolment system, Indonesia, Higher Education, Quality, Students,*

### Introduction

Many organizations around the world are always updating and redesigning their offerings to their clients for the sake of the development and survival of their enterprises, corporations, states, non-governmental organizations and also higher education institutions. In higher education institutions, in instance, the existence of electronic communications technology will facilitate the distribution of programs with real-time performance to the demands of customers such as copies of documents, teaching schedules, syllabuses, ratings, student finance documents and many others instantly (Almaiah & Man, 2016). The use of digital communications technology in the institution could

---

<sup>1</sup>Dr. Public Administration Department, Faculty of Social and Political Sciences Padjadjaran University, Bandung Indonesia; [didin\\_muhafidin@yahoo.co.id](mailto:didin_muhafidin@yahoo.co.id)

be used as a competitive edge for the institution by providing a service to its stakeholders (Sligo, et al, 2017).

In this global age, quality administration is needed, as Koc, Turan and Okursoy (2016) for global competitiveness as well as market demands, for each higher institution and assess its current output of service in the face of super and international competitors. In fact, government rules often mandate every university education organization to meet with all legislation appropriately. Continuous delivery shall have the consistency of all operational tasks, like on-line enrolment processes for new graduates as well as current students, topics, classroom schedules, use of knowledge and instructional practices such as truancy, graduation, curriculum, absences, etc. Individuals involved in the service delivery must understand the scope to which the quality, functionality and scope of the information is often used. As the purpose of providing services in order to fulfill the requirements of the criteria to the shareholders (Ognjanovic, Gasevic & Dawson, 2016). At present, educational institutions of the world are challenged to promote equitable learning outcomes to students since achievement gap is still an issue (Addai-Mununkum, 2019; Ainscow, 2016; Buckley, 2010; Clark, 2014; Darling-Hammond & Friedlaender, 2008; Espino et al. 2020; Nadelson et al., 2020; Perry, 2009; Speed et al. 2019; Tarman & Dev, 2018). They are advocating educational equity calls to address inequity in student learning, which is attributed to issues on gender, race, family income, and cognitive disability. Embracing educational equity in the schools is a way of supporting transformative education (Adams, 2019; Godhe, Lilja & Selwyn, 2019; Vossoughi, Hooper & Escude, 2016).

Barton et al (2016) consented on the required introduction of the university system of learning facilities, and it is important to ensure consistency and efficiency in the learning experience. Without an educational information system, the process of learning will not function well in the learning process. Information systems today have become important part of the higher educational milieu. Many higher education institutions are using the information system as a tool for productivity and competition, but fewer have the capacity to respond to a number of changes related to the development of the organization within (Arpaci, 2019). The competitive advantage relied on standard variables such as efficiency price, consumer response and speed (Dun & Kennedy, 2019). Today's organizations pose an added challenge of the need to evolve, not sometimes but sometimes, rapidly with a consistent rate of success. According to Kompen et al (2019) the design of the systems and software offered by the Information Systems Group is also

assumed to have evolved over time where new strategic solutions often appear to be aimed at the consumer or sales market rather than internal optimization schemes.

### **Purpose of the Study**

This study generally examined the experience of one university in Indonesia on the implementation of information system on registrar, cashiering, and accounting services and assess the student's satisfaction on the providing these systems in the university operations.

## **Methods**

### **Research Design**

In order to explore the delivery of Institutional Information Systems services that have been introduced at one university in Indonesia, the researcher used the existing data documented in the program that can be accessed accordingly. By gathering and choosing details about how to deliver services to the Academic Information System used by administrators as well as faculty and students. The technique used in this report is descriptive. Descriptive research was carried out by presenting the flow of service data to customers and also by collecting and recording the related data, such as the statistics and tables from the current show data in the apps, which were then evaluated and addressed accordingly.

### **Research Participants, Sampling Procedure and Ethical Considerations**

A total of 377 respondents systematically sampled from a total population of 2000 students from one Indonesian University. Determination of sampling size was based on the use of a free online software Raosoft <http://www.raosoft.com/samplesize.html> with the margin of error of 5%, confidence level of 95%, and response distribution of 50%. Using a systematic non-random probability sampling technique, the complete list of respondents was requested from the university registrars of the participating universities with the three as the select random start number. This study was guided by the following research ethics considerations. First, data privacy and informed consent forms were approved by the university ethics committee to be signed by the respondents of the study. Second, orientation on the purposes of the study was done by the researcher prior to the administration of the instruments. Thirdly, the anonymity of the respondents and the institution was observed by not mentioning names.

**Research Instruments**

The study used interview guides to identify problems and concerns of the three primary service providers the findings of the interview were used to describe the features and functionality of the system. Direct observation was also used, prior to the development of the framework, to further analyze the requirements and issues encountered by students as core beneficiaries. This device was also used after the program was configured for service. Rating is on the efficiency of the system. The survey was taken from the student satisfaction survey developed by the staff of the University Planning and Development Office. The questionnaire used the 5-point Likert scale indicating: 5-Best; 4-Better; 3-Good; 2-Fair; 1-Poor.

**Procedures**

This study was conducted within a four-month time period. The data-gathering period lasted for one month. Before the formal gathering period, the university authority's approval and permission to do the study was initiated in the first week. Notice to proceed for the conduct of the research was issued during the second week. After securing the appropriate permit, the researcher identified the respondents using the inclusion criteria set in this study. Likewise, proper and appointment with the students were conducted for the formal gathering for another one week. The orientation of the research's purposes and objectives was done to the participants. The administration of the two research instruments was done by the researcher with the appropriate permit and proper coordination to avoid conflict of schedule. During the study, the interviewer went to the Registrar, the Cashier and the Accountant on an individual basis to define the requirements and issues of their respective offices. The researcher has consistently done the same thing as data is required until the device features and capabilities have been completed. During the study, the interviewer went to the Registrar, the Cashier and the Accountant on an individual basis to define the requirements and issues of their respective offices. The investigator has consistently done the same thing as data is required until the device features and capabilities have been completed. The research ethics considerations were strictly followed by the researcher. After gathering the students' responses, they were coded and subjected to data cleaning and statistical analyses for one month. The gathered data were analyzed using SPSS version 25.0. Finally, results analysis, interpretation, and report writing were done for one month.

### **Data analysis**

The study used interview guides to identify problems and concerns of the three primary service providers the findings of the interview were used to describe the features and functionality of the system. Direct observation was also used, prior to the development of the framework, to further analyze the requirements and issues encountered by students as core beneficiaries. This device was also used after the program was configured for service. Rating was on the efficiency of the system. The survey was taken from the student satisfaction survey developed by the staff of the University Planning and Development Office.

### **Results and Discussion**

The objective of this study is to see how a university in Indonesia implements the information system on registrar, cashiering, and accounting services and assess the student's satisfaction on the providing these systems in the university operations. Using all of the interconnected capabilities of the full system to support front-line service transactions the three main front-line service suppliers received high scores in terms of quality, timeliness and consistency of service delivery based on the adopted findings of the Students Satisfaction Survey for Front-line Services as evidenced by the grand mean of 4.03. The required configuration has been completed; thus, the program has the potential to support all transactions needed by both consumers and clients. Undergraduates who want to see their grades would no longer be in the Registrar's office because there is a computer system built in a software unit outside the office that offers a simple-to-use option for learners to access their grades. This functionality also made a registrar more successful. It is also more pleasant for the part of the students because there is no more conflict. Based on the actual findings, the time spent on the delivery of frontline services during normal circumstances has been that. At present, enrolment of freshmen learners can be achieved in 4-6 minutes, 2-3 minutes for old and usual students and 2-4 minutes for irregular students; approval of grades and enrolment can be completed in 1 to 2 minutes; The processing and publishing of the official transcript of the documents can be completed in Ten to Twenty minutes and the printing of the rating assessment can be achieved in 1 or 2 minutes for regular students. In addition, invoice and acceptance can be received in 1 minute; review permits can be given in 1 to 3 minutes; The student fees may be calculated in less than 1 minute, but it may no longer have been included in the

enrolment phase as the system will automatically measures the outstanding student balance and the student ledger adjustment may also be omitted as a step during enrolment.

As seen in Table 1, the Student Satisfaction Report showed that the audited Accounting Services in terms of quality, timeliness and precision have a grand mean of 4.16 (sd=0.88) fall to the Better rating. Registrar services also was rated better as shown with the mean of 3.71 (sd=1.20) while cashiering services obtained the mean of 4.24 (sd=0.90) showed the highest mean and interpreted with the better rating. Based on the results of the survey, it is revealed that the SIAS is efficient in delivering the providers of the three frontline service providers.

**Table 1.**

**Satisfaction on the use of the Systems among the Students**

<b>Areas</b>	<b>Mean (n=377)</b>	<b>SD</b>	<b>Descriptive Interpretation</b>
Accounting Services	4.16	0.88	Better
Registrar Services	3.71	1.20	Better
Cashiering Services	4.24	0.90	Better
Grand Mean	4.03		Better

*Legend: Best (4.20-5.00); Agree/ High<sup>b</sup> (3.40-4.19); Better (2.60-3.39); Good (1.80-2.59); Fair (1.00-1.79)*

Information technology does have an influence not only on dissemination of educational information, but also on auxiliary operations of the universities (Lazzari et al, 2019). Because students today are more technologically advanced than most of the staff, the consequences for the academy would certainly include a broad range of opportunities to exploit the advantages of modern hardware and software technologies in ways that really improve educational experience. However, as universities are more mindful of results, new ways of innovating in the provision of support services will emerge; organizations whose organizational structures are most open to new ideas will gain the most benefits. Eaton and Pasquini (2020) affirmed that all the most innovative companies are adopting and depending on information technology systems to improve their business processes and profitability. The collection of processes for arranging, coordinating, guiding and managing the delivery of IT services. In addition to the advancement of ICT within the enterprise, human resources are also being developed in order to achieve good service quality (Al-Kurdi, El-Haddadeh & Eldabi, 2020; Tarman, Baytak & Duman, 2015). In providing services to customers and employees, the organization shall provide and retain questions regarding performance management, people management, resource management, preparation and facilities management. Recently, the policies of institutions of higher education require good academic

management. Reports from any university shall be provided to the government on a periodic basis and reviewed by government officials from time to time.

### **Conclusion**

ICT has made a lot of investments to the rapid transformation of modern society. The goal of the study was to establish a highly customized SIAS in Indonesia to promote the enrolment and accounting phase and to meet the needs of all clients and employees in the provision of line services. This study applied the context of Computer Science Research for Information Systems, while describing the problems faced in the enrolment and accounting phase, specifying the analysis purpose, planning and implementing the program, installing and testing it, and reporting the results of the study. The digitalized enrolment system works in numerous computer units over a system with a shared database for data storage. It has distinct embedded features that promote the needs of frontline service providers and customers. The aggregate feature of the enrolment system has increased the efficiency of the frontline providers, as most of the processes are automated and computerised. The results of the survey, along with service quality, precision of documents and records and promptness, demonstrate that the enrolment system is significant and effective instrument for delivering front-line services hence, improving the quality service of higher education institution in Indonesia.

### **Practical Implications**

The development of infrastructure using high-end information technology is strongly recommended for the implementation of real-time data to stakeholders among higher education institutions of Indonesia. Management of the university recommends applying the innovation plan through the use of AIS software technologies to provide programs to students and lectures to other stakeholders as well. The results of the study in the report was suggested and advised by University to refine the idle module and sub-module for implementation in order to provide better service to stakeholders. There are many higher education institutions across the world that still do not use the web-based development program, resulting in dissatisfied students and late government reports, many higher education institutions will follow this framework to handle the provision of resources in their higher universities.

### Limitations and Future Research Direction

This study is subject to limitations which will provide future research directions. First, to further ascertain and close the gap of this study, a national survey may be initiated with larger samples, which will offer a more in-depth analysis and understanding of the influence of developed university systems. Questions and gaps are presented in this study, which can help future researchers chart their research problems. Second, the use of a mixed-method research design is encouraged since this study is only limited to the descriptive correlational survey. Thirdly, a longitudinal study must be initiated, focusing on the direct effect of social and cultural capital on learners' cognitive, affective, and psychomotor development. Finally, a follow-up study should be conducted aligned with the attainment of Indonesia's education modernization.

### References

- Adams, B. (2019). The Far Reaching Impact of Transformative Curriculum. *Journal of Curriculum Studies Research*, 1(1), 17-32. Retrieved from <https://curriculumstudies.org/index.php/CS/article/view/8>
- Addai-Mununkum, R. (2019). Students' representation of "other" religions. *Journal of Curriculum Studies Research*, 1(1), 1-16. Retrieved from <https://curriculumstudies.org/index.php/CS/article/view/2>
- Ainscow, M. (2016). Collaboration as a strategy for promoting equity in education: possibilities and barriers. *Journal of Professional capital and community*, 1(2), 159-172.
- Al-Kurdi, O. F., El-Haddadeh, R., & Eldabi, T. (2020). The role of organisational climate in managing knowledge sharing among academics in higher education. *International Journal of Information Management*, 50, 217-227
- Al-Kurdi, O. F., El-Haddadeh, R., & Eldabi, T. (2020). The role of organisational climate in managing knowledge sharing among academics in higher education. *International Journal of Information Management*, 50, 217-227
- Almaiah, M. A., & Man, M. (2016). Empirical investigation to explore factors that achieve high quality of mobile learning system based on students' perspectives. *Engineering science and technology, an international journal*, 19(3), 1314-1320.



- Arpaci, I. (2019). A hybrid modeling approach for predicting the educational use of mobile cloud computing services in higher education. *Computers in Human Behavior*, 90, 181-187.
- Barton, K. A., Tejay, G., Lane, M., & Terrell, S. (2016). Information system security commitment: A study of external influences on senior management. *Computers & Security*, 59, 9-25.
- Bourdieu, P. (1977). *Outline of a Theory of Practice* (Vol. 16). Cambridge university press.
- Tarman, B., & Dev, S. (2018). Editorial: Learning Transformation through Innovation and Sustainability in Educational Practices. *Research in Social Sciences and Technology*, 3(1), i-ii. Retrieved from <http://ressat.org/index.php/ressat/article/view/363>.
- Tarman, B., Baytak, A., & Duman, H. (2015). Teachers' views on an ICT reform in education for social justice. *Eurasia Journal of Mathematics, Science and Technology Education*, 11(4), 865-874. 10.12973/eurasia.2015.1445a
- Clark, I. (2014). Equitable learning outcomes: supporting economically and culturally disadvantaged students in 'Formative Learning Environments'. *Improving Schools*, 17(1), 116-126.
- Darling-Hammond, L., & Friedlaender, D. (2008). Creating excellent and equitable schools. *Educational Leadership*, 65(8), 14.
- Dunn, T. J., & Kennedy, M. (2019). Technology Enhanced Learning in higher education; motivations, engagement and academic achievement. *Computers & Education*, 137, 104-113.
- Eaton, P. W., & Pasquini, L. A. (2020). Networked practices in higher education: An ethnography of the# acadv chat community. *The Internet and Higher Education*, 45, 100723.
- Espino, D., Lee, S., Van Tress, L., Baker, T., & Hamilton, E. (2020). Analysis of U.S., Kenyan, and Finnish Discourse Patterns in a Cross-Cultural Digital Makerspace Learning Community Through the IBE-UNESCO Global Competences Framework. *Research in Social Sciences and Technology*, 5(1), 86-100. Retrieved from <https://ressat.org/index.php/ressat/article/view/442>
- Godhe, A. L., Lilja, P., & Selwyn, N. (2019). Making sense of making: critical issues in the integration of maker education into schools. *Technology, Pedagogy and Education*, 1-12.
- Koç, T., Turan, A. H., & Okursoy, A. (2016). Acceptance and usage of a mobile information system in higher education: An empirical study with structural equation modeling. *The International Journal of Management Education*, 14(3), 286-300.

- Kompen, R. T., Edirisingha, P., Canaleta, X., Alsina, M., & Monguet, J. M. (2019). Personal learning Environments based on Web 2.0 services in higher education. *Telematics and Informatics*, 38, 194-206.
- Lazzari, N., Becerro, M. A., Sanabria-Fernandez, J. A., & Martín-López, B. (2019). Spatial characterization of coastal marine social-ecological systems: Insights for integrated management. *Environmental science & policy*, 92, 56-65.
- Nadelson, L. S., Albritton, S., Couture, V. G., Green, C., Loyless, S. D., & Shaw, E. O. (2020). Principals' Perceptions of Education Equity: A Mindset for Practice. *Journal of Education and Learning*, 9(1).
- Ognjanovic, I., Gasevic, D., & Dawson, S. (2016). Using institutional data to predict student course selections in higher education. *The Internet and Higher Education*, 29, 49-62.
- Perry, L. (2009). Characteristics of equitable systems of education: A cross-national analysis. *European Education*, 41(1), 79-100.
- Sligo, J., Gauld, R., Roberts, V., & Villa, L. (2017). A literature review for large-scale health information system project planning, implementation and evaluation. *International journal of medical informatics*, 97, 86-97.
- Speed, J., Pair, D. L., Zargham, M., Yao, Z., & Franco, S. (2019). Changing Faculty Culture to Promote Diversity, Equity, and Inclusion in STEM Education. In *Culturally Responsive Strategies for Reforming STEM Higher Education: Turning the TIDES on Inequity* (pp. 53-72). Emerald Publishing Limited.
- Vossoughi, S., Hooper, P. K., & Escudé, M. (2016). Making through the lens of culture and power: Toward transformative visions for educational equity. *Harvard Educational Review*, 86(2), 206-232.