Article

Digital Culture Development of the Library Agency of East Kalimantan Province : An Autoethnography Note

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Abstract

The libraries must be able to transform into a digital library so they can build a digital society and serve the digital generation. Problems occur when the library itself fails to develop the digital culture of its employees which results in the failure of transformation into a digital library. This article is an experience in undergoing and observing the efforts of the Library of East Kalimantan Province to transform itself into a digital library. This effort has lasted until now, where one of the obstacles is that most employees are digital immigrant generations. Data collection was done by remembering and writing down the process from 1992 to the present. The analysis process was employed by looking at every meaning of the writing in the diary (content analysis). In 2015, The Library Agency of East Kalimantan Province of Indonesia obtained an A rating in the management of digital libraries from the National Library of Indonesia. There are three factors that need to be considered in the transformation effort, namely formal and informal education for employees, leadership, and employee mental development. This article is beneficial for government institutions in facing the constraints of transformation into digital libraries, especially dealing with employees who are mostly immigrant digital generations.

Keywords

East Kalimantan; digital immigrant; autoethnography; library; digital native

INTRODUCTION

One role of the library is to help building and developing the digital culture of society. 96.3% of public libraries in the US provide online services and databases, as well as help to search online information sources (Bertot, 2016). Libraries in America have a big role in overcoming the digital gap in society, teaching digital literacy, even for policies related to these gaps and literacies (Jaeger et al., 2012). The same thing is addressed by Kinney (2010) stating that libraries have a key role in narrowing the digital gap. Therefore, library is one institution that is required to be able to transform from conventional into a digital one and to build a digital society and serve society who is currently part of the digital native.

Digital library refers to a system that has various services and objects of information that can be accessed by users through

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digital or electronic devices. The examples of services include helping someone to find information on a collection of information objects, such as documents, images, multimedia and databases. The availability of the object of information can be direct. This means that the information object has a digital format so that it can be directly accessed electronically. It can also be indirect, where the information object is still in the form of books or paper, but has an electronic format metadata so that it can be accessed electronically (Prasetyo et al., 2016).

Digital library users are digital generation who are accustomed to use computer and internet devices. Prensky (2001) divides this generation into two, namely digital native and digital immigrant. Digital Native is a generation that grows up together with the development of digital technology. Characteristics of this generation include:

a. Spending time in front of computers, video games, digital music players, video cams, cell phones and game or digital devices more than reading.
b. Prefer to play games rather than work/ study seriously, where with these games they claim to be learning.
c. Prefer graphic (image) information rather than text
d. Prefer to access / learn randomly, rather than step by step
e. Prefer to build networks, rather than individuals

It was reported that social media has the most influence on the digital generation born in 1995 or later (Hakkarainen et al., 2015). Adolescence from this generation is very intensive in using digital technology than the previous generation. Meanwhile, digital immigrants are a generation who live before the digital technology is developed. They like and adopt those various digital technologies. This generation has inverse characteristics with digital native generation, which include:

a. The internet is not the main choice in finding information.
b. Prefer to read the manual first, rather than directly exploring the program.
c. Print an email, or ask someone else to print the email
d. Prefer step by step and individual work in solving one material at a time.

Traditional libraries are only a collection of books with manual catalogs. The later developments emerged as semi-modern libraries which used digital catalogs. The most recent development is a digital library that requires computers and the internet to access its collection. Digital library collections are in the form of digital data, so they have advantages in terms of access speed (Subrata, 2009).

The digital generation will have difficulty using the convention library, where the room is used for storing library materials and provides a series of tables and chairs for reading (Yusuf, 2015). Donald Beagle offers the idea of changing the shape and design of library spaces that are supported by internet technology and facilitated by the needs of the digital generation, making it attractive for this generation to conduct various activities in the library. These concepts then expand the functionality of the library information commons into a learning commons, where the library is equipped with facilities and tools for learning such as tutorials, materials for learning writing and so on (Beagle, 2009; Kranich, 2007).

However, the transformation process of the conventional library becomes a digital library often encounters several obstacles, one of which is how to change the way of thinking of the employees who lived when digital technology was not yet developed. Libraries in developed countries, such as Australia and Canada do not seem to be challenged by this problem. This is illustrated in a study conducted by Williamson (2016). This condition is different from Indonesia. Employees often refuse to learn to operate computers and use various applications. Failure in establishing digital culture for employees will cause a failure of the institution's transformation process. This will result in the downturn of the library and the reduction of supporting funds.

This paper aims to identify best practices that encourage the formation of a

culture of employee's practice. These goals can be achieved by observing the efforts of the Library Agency of East Kalimantan Province to build a digital culture for its employees. This effort has lasted until now, considering all employees are digital immigrant generations. This paper is written to address the factors that influence formation of digital culture for employees who are immigrant digital generations in the library transformation process of the Library of East Kalimantan Province in becoming a digital library. This article is beneficial for government institutions in facing the constraints of transformation into digital libraries, especially facing the characteristics of immigrant digital generations and the demands of digital services to meet the needs of digital native generations.

METHODOLOGY

The paper employed an autoethnography approach which refers to an approach to research and writing that aims to describe and systematically analyze personal experiences to understand experiences related to culture. In using and writing papers with the autoethnography approach, I used the principle of autobiography and ethnography. Autoethnography method is a process and produces a product (Ellis et al., 2011).

The autoethnography approach is beneficial to study transformation phenomenon, especially for a researcher. Transformation is a permanent change. Experience undergone by someone can be a powerful learning for people. Criticism given to the environment will be a criticism for others who are directly or indirectly part of themselves. When people transform, it causes another socio-cultural transformation (Qutoshi, 2015).

The use of the autoethnography approach in the field of computer science research has not been implemented widely. In the last 5 (five) years, there are only 10 articles found in the Scopus database, namely those written by Kidd (2010), Davidson (2012), Costello et al. (2016), Chua (2015), Kettunen (2014), O'Kane et al (2014), Guzik (2013), Henning (2012) and Kruse (2012). This approach is used among others in the field of technology adoption (Armendáriz, 2007), education (Hayler, 2011), sports (Cooper et al., 2016), (Schaeperkoetter, 2016), (Stephenson, 2016) and community health (Hodgkin, 2015; Liggins et al., 2013).

The autoethnography approach is said to be the most suitable for achieving the goals that I intends, namely observing and analyzing best practices on the formation of digital culture experienced by me as a digital immigrant generation. Besides, the approach fits the purpose to observe the efforts of the Library of East Kalimantan Province when transforming into a digital library to meet the demands of digital services for digital native generations.

This method allows me to do observation of half cycles which began when I first became an employee of the Library Agency of East Kalimantan Province in 1992 until currently I become a middle leader (Echelon 3), namely the head of Information and Automation. The data collection process is done by remembering the periods and processes from 1992 to the present, then writing them in a diary. Often the precision of data in a process like this is questioned. Hayler (2011) in (Potter, 1994) stating that the power of memory is not on precision or that the author is constricted but from how people, at present, are related to construction and re-construction in the past. The analysis process is done by looking at every meaning of the writing in the diary (content analysis).

The Composition of employees of the Library of East Kalimantan Province

There are 83 people working in the Library Agency of East Kalimantan Province. Structurally and functionally, the employees of Library Agency of East Kalimantan Province are categorized into five (5) categories as provided in Table 1.

The composition of employees of the East Kalimantan Province Library Agency

based on the birth period, i.e. before and after the 1995 birth year, is presented in table 2. It appears that all employees in the library are digital immigrant generations. The composition of employees of the East Kalimantan Provincial Library Agency based on educational qualifications is described in table 3.

Table 1. Employees of the Library of East Kalimantan Province Based on Structural and Functional Groupings

No	Category	Gender		total
		Man	Woman	
1	Structural Officer	5	8	13
2	Functional Librarian	8	17	25
3	Computer Administration	1	2	3
4	General Functionality	14	11	25
5	Contract worker	11	6	17
	Total	39	44	83

Table 2. Composition of Employees of the Library of East Kalimantan Province Born Before and After 1995

No	Category	Period of Birth Year		total
		Before 1995	After 1995	
1	Structural Officer	13	-	13
2	Functional Librarian	25	-	25
3	Computer Administration	3	-	3
4	General Functionality	25	-	25
5	Contract worker	17	-	17
Total		83	-	83

Table 3. Composition of Employees of the Library Agency of East Kalimantan Province Based on Education Qualifications

No	Category	Gender		total
		Man	Woman	
1	Postgraduate (S2)	5	8	13
2	Bachelor degree (S1)	11	17	28
3	Diploma III	3	4	7
3	Senior High school	19	15	34
4	Junior High school	1	-	1
	Total	39	44	83

History of the Library of East Kalimantan Province regarding ICT

In 1992, the Library Office of East Kalimantan Province had a limited number of computer devices which were used to support the activities of compiling secondary literature in the form of publication of Regional Master Catalogs (KID), Regional Bibliographies, and the Lists. Besides, those computers were also used to make letters and bulletins. Meanwhile, the application that was widely used at the time was Wordstar[1]. The computers also used the Lotus application, specifically to support treasury tasks (making a payroll) and asset structuring tasks in making Room Inventory Cards (KIR) and Goods Inventory Cards (KIB) in the administration section.

At that time, the computers were very expensive and of course the supply of computer units was also limited. Hence, the number of employees who could use computers was also very limited. The manual typewriters became the mainstay of employees to support the implementation of routine tasks, such as typing catalog cards and making library member cards.

The officer who was able to use the computer at that time was only limited to a number of operators whose status was non-permanent employee, who were generally young, with an average of 20 years old. Computer operators at that time amounted to only about 3 people, consisting of computer operators to handle the preparation of secondary literature and bulletins. There were also computer operators for making payrolls and computer operators for handling assets. Thus, practically, the number of employees who could use computers to support their daily work in the office was very limited and rare.

Information technology (IT) applications to support library automation pro-

1 WordStar (WS) is a word processing application that dominated market share since its arrival until the mid 1980s. WS was produced by MicroPro International, and runs on the CP/M operating system, but was later changed to DOS. The main owner of the company is Seymour I. Rubinstein, while the main developer of the WS is Rob Barnaby, then continued by Peter Mierau

grams in the Library Agency of East Kalimantan Province have been initiated since the beginning of 1998. In the era of 1998 – 2006, the application of library automation systems in the Library Agency of East Kalimantan Province only focused on collection tracking systems using the DOS version of SIPISIS. SIPISIS is a development of automation software from UNESCO CDS/ISIS. This software can be used to handle routine work in the library automatically.

Then, in early 2007, the library automation system application was gradually developed thoroughly by applying circulation modules, guest books, member card printing, late book administration, and reporting using SIPISIS for Windows software. Since June 2009, the library automation system at the Library of East Kalimantan Province will be further developed with a web-based system by applying the MY-SIPISIS Pro software.

In 2001 – 2016, about 97% of employees of the Library Agency of East Kalimantan Province have been able to operate computers especially for MS-WORD and Excel applications and the library automation system application MY-SIPISIS Pro to support routine work in accordance with their respective tasks, especially in preparing reports, making letters conventional and electronic mail, circulation services both on-line and on-site. Besides that, they have also been able to use smartphones, especially for social media purposes such as *Facebook, Line, Instagram, Whatsapp, Black Berry Messanger,* and *Twitter*.

The Library Agency of East Kalimantan Province has run an IT-based library service and has received an award from the National Library of Indonesia in 2015 with an A rating in digital library management.

Establishment of Employee Digital Culture

Formal education is an authorized capital to be able to understand information technology. I still used typewriters to compose the final project in Library Science program D3 Non-Degree Faculty of Social Sciences - Hasanuddin University (UNHAS). Even though, I have followed theory and practice use of Wordstar (WS) and Lotus for 1 semester. This was because I did not have a computer and the ability to use WS was still inadequate. WS and Lotus learning continued until I took the S1 program. I use a computer and WS application for complete the thesis. I feel that experience is valuable and extraordinary.

On March 1, 1992, I was accepted as a Civil Servant (PNS) at the Library Agency of East Kalimantan Province and began working actively on August 1, 1992. At the beginning of the assignment, I was placed in the Acquisition Section of the Bibliography Processing and Deposit. When I started working on August 1, 1992, the number of computers owned by the Provincial Library Agency of East Kalimantan was 6 units, equipped with WS, Lotus applications, and the DOS version of the VTLS library automation application. As I recall, employees who could use a computer at that time were around 7 people. At that time, compact discs or flash disks were not known. There were data storage media in the form of floppy disks. I myself was no stranger to WS and Lotus applications because I understood the application since I was in college. So at that time, there was a feeling of pride because I was one of the employees who could use the computer. My immediate supervisor and also my colleagues knew this, so at that time I was given many assignments and responsibilities to handle typing secondary literature such as the Regional Master Catalog (KID), Regional Bibliography and also the bulletin.

Meanwhile, my desire to learn the VTLS library automation application cannot be realized because it was not given access by the person in charge of the application at that time. Only a handful of people mastering VLTS application of DOS version were highly respected in the office environment.

In early 1995, I took the initiative to lead the leadership to ask for opportunities to take computer courses in order to understand the use of Ms-Office applications (word, excel and power points). The effort paid off because at that time the lea-

der gave permission at the expense of the office. This is where I initially got to know and start using the Ms-Office application and until now I am very familiar with this application because it really supports the implementation of my daily tasks.

In 1994, the MS-Office application began to become popular and at that time computer courses began to emerge that taught material about Ms-Office. The emerging of Ms-Office made me and my friends who had mastered the WS and Lotus feel uneasy and left behind. Through various articles and also books about computers, we know a lot that the Windows - based MS-Office application is extraordinary because it is no longer bothered with memorizing commands like in DOS operating systems. Windows version of Ms-Office uses icons on its interface. At that time my friends and I were very impressed with the changes and progress of IT.

On the other hand, there are interesting and arguably rather unique behaviors of employees of the Library of East Kalimantan Province in the 1992 - 1994 eras in looking at the presence and use of computers. At that time, the employee had a perspective not to touch, let alone press the button on the computer keyboard because it would cause the computer hardware to be damaged and the existing software would become chaotic.

Organizations need to pay attention and overcome the lack of skills of employees in digital technology. The level of skills and competencies that the employee had at the moment and needed in the coming year also need to be identified. Organizational failure in understanding these needs is a barrier to the formation of digital culture in employees (Kohnke, 2017). Kohnke (2017) also mentions that investment in digital technology education and training is a key factor in the success of the digital culture development process for employees. McAfee & Welch (2013) state that it is a challenge for organizations to employ people of different generations. Younger employees are generally more familiar and not have obstacles to learning digital technology. On the opposite, older employees usually have doubts about learning digital technology, even to the point of refusing to use.

Choi & Rasmussen (2006) and Missingham (2006) have identified what abilities and skills needed for librarians in digital libraries. A digital library will not reach its maximum potential without education, skills and good skills from its employees.

The digital gap intergenerational organizations can not only be overcome by education and training. It can also be bridged by sharing experiences among employees (Wokurka, Banschbach, Houlder, & Jolly, 2017) for example senior employees provide career coaching, while younger employees contribute digital skills and perspectives on how to use technology better.

Factors which greatly affects the Library Agency of East Kalimantan Province in implementing library automation program, in the sense of the use of computers to support the activities of librarianship, particularly for the processing of library materials and library services in the era of 1995 - 199 7 are as follows :

a. Assigning several employees including librarians to attend various types of workshops and apprenticeship IT applications in libraries organized by the National Library, Center for Scientific Documentation and Information of the Indonesian Institute of Sciences (PDII LIPI) and several universities, such as UGM and IPB.
b. Assigning several employees to take computer courses at the course institutions in Samarinda.
c. Inviting resource persons and instructors to provide briefings to employees of the Library Agency of East Kalimantan Province regarding the use of IT in the library.

Meanwhile, among employees at that time, understanding of the use of computers, laptops and social media applications on smartphones is not only obtained from the course, but also from the help of colleagues who have understood the program. They are the employees between 21 - 35 years old, even from their children in their respective families. One interesting thing

about my personal experience in the use of information technology devices is in the use of smartphones. To be honest, I have to say that I am one of the latest people who use the smartphone, even though I started using my cellphone actively in 1999. This happened because my initial need for this sophisticated communication tool was only for telephone and SMS. As I get older (now I am 50 years old) and have increasing work duties and responsibilities of the office and also the internal and external dynamics that occur, I was forced to start using a smartphone in 2012. I have to spend approximately one week to understand the features and applications in the smartphone. In the process of learning to use smartphone features, I asked many questions and learned from my child who at that time sat in the second grade of vocational high school and also my child who was in the 6th grade elementary school. At that moment, I wondered that my children understood the use of smartphone features better than I did. When and where did they study it? Who taught them?

In February 2009, I was appointed as the Head of Information and Automation in Library Agency of East Kalimantan Province with the principal task of formulating and developing IT-based library services. My ability to use the Ms-Office application certainly does not have much effect on the duties and responsibilities given by my institution.

I am well aware that I still have many shortcomings in using to realize IT-based library services. My understanding of library automation applications and also about digital libraries is still lacking. As chairman of a middle manager, I should be able to develop a strategy to establish a digital culture of my employees, so that they are able to help me developing a digital library.

In dealing with these obstacles, I see there is an opportunity to keep developing library automation systems and also digital libraries in my office. These opportunities can be identified as follows:

a. There is attention, support and motivation from leaders to develop library automation systems and also digital libraries. One of the actions is by issuing a Decree to create a Library Automation Team.
b. The availability of human resources in the form of my staff who are still classified as young people who have a computer education background and have idealism to realize the library automation system.
c. The number of IT consultants and vendors for libraries.

I solve the limitations in understanding the theory and practice of library automation applications to support digital libraries by optimizing the 3 opportunities mentioned above through the following strategies:

a. Collaborating with one of the IT vendors who are considered able to meet our needs for library applications. In this case, we chose the MY-SIPISIS application to realize the library automation system in my office.
b. Sending some staffs to explore the use of the MY-SIPISIS application.
c. Hiring an IT consultant in Samarinda. We need IT consultants to provide advice and input for the construction of Local Area Network (LAN) networks, data center development (server room) and others related to the implementation of library automation systems.
d. Appointing a contractor from Computer SMK alumni in Samarinda. Two people will be prepared to become IT administration officers.

Leaders who have a vision, commitment, and support for their employees to learn and apply IT will encourage the formation of a digital culture of employees. The government established a digital culture organizations require new forms of leadership. A leader must understand the implications of funding the organization and the people who work in it (Kohnke, 2017).

According to Le., (2015), the character of the library leader that must be possessed in the digital era is having a vision, integrity, ability to manage and build cooperation

and communication. Meanwhile, Marcum (2016) has a more detailed opinion about leadership in the digital era, namely having certain attitudes in accordance with digital products offered, being flexible and adaptable, having intellectual curiosity and thirst for new knowledge, being able to see value in different perspectives, adapting to uncertain, egalitarian and considering the results of previous leaders. Meanwhile, using Herrmann Brain Dominance Instrument (HBDI), De Boer, Bothma, & Olwagen (2012) develop modules for training to become library leaders to meet the requirements of the digital era.

The employees who have motivation, endurance to continue learning, understanding, and using IT tools will more quickly form a digital culture within itself. Learning motivation in adults is influenced by motivation and experience during adolescence, triggered by the hopes and values that are wanted to be pursued (Gorgesa & Kandler, 2012). The example of such values is becoming proud of being included in a handful of employees who control computers. Additionally, their remarkable sense of ethics used WS, word processor which was the most current application at that time. Any other value is the employees who controlled the VTLS DOS version application at that time was highly respected in the office environment. If an employee adheres to those values, it will encourage the formation of digital culture. Wokurka et al., (2017) convey that emotion and feelings of employees should be taken seriously in establishing the development of digital culture.

Discussion of the workforce for the digital library puts more emphasis on the planning, development and the needs of employment in addition to education and training of IT as described by Sinha (2008). In his book, Allison (2013) states that although professionals who work in libraries need to have specialization, they still need more flexible generalists and have the motivation to learn to change the environment. These capabilities are needed especially in the field of content management systems in digital libraries.

The employee education is generally more geared to the abilities and skills, and tends to ignore the mental education as motivation and endurance. The mental condition of employees can be formed by providing mental education by the institution or having already been formed during the growth process as conveyed by (Gorgesa & Kandler, 2012). However, mental education is mostly ignored. It could be due to limited funding at the institution, so that training to improve IT skills and skills will take precedence. If the condition is understood by the institution, then the recruitment process should provide an instrument to identify the mental condition of prospective employees. The instrument will help us in selecting prospective employees who have the motivation and endurance to continue learning. Although these employees are classified as digital immigrants, the mental conditions they possess will accelerate the formation of their digital culture.

CONCLUSION

The establishment of a digital culture for employees who are born and grow up when digital culture has not happened requires a strategy. Often the policies of institutions that try to divert work from manual to automation by utilizing information technology are unsuccessful because of resistance from employees. The library is currentlu required to turn into a digital library so that it can help shaping the digital culture of society and serve the digital generation in society.

Library transformations into digital libraries demand changes in employees at all levels of the organization. Based on the personal experience above, I can conclude that the formation of digital culture in a digital immigrant in an organization is influenced by three things, namely formal and informal education, leadership that is able to develop strategies, and mental conditions of employees who have the motivation and willingness to continue learning.

The autoethnography technique in

this article shows the best practices of the organization in which I work, in shaping a digital culture within me, as a digital immigrant. As a new employee with sufficient IT education, having leadership that supports employees and social values that I embrace motivate me to continue learning. Then, I was able to develop leadership and strategy when I have reached the middle leadership position. This condition was considered as one of the backgrounds that led the Library Agency of East Kalimantan Province to get an A rating in the digital library management of the National Library of Indonesia in 2015.

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