DIGITALIZATION OF PERSONNEL MANAGEMENT IN SECONDARY SCHOOL ADMINISTRATION

Dr. Ozokwere Helen Nkechi
Department of Educational Management
Tansian University Umunya Anambra State
drozokwere@gmail.com

&

Prof. Uchenna Becky Onuh
Department of Educational Management
Tansian University Umunya Anambra State
onuhuchenna@yahoo.com

Abstract

This work studied digitalization of personnel management with focus on secondary school administration. Digitalization as a concept is described to mean act of applying digital technology to everyday task to make work easier. It is distinguished from digitization which is encoding the manual work into digital form, whereas both are the elements of digital transformation. Some digital devices and their uses explored in the study included various types of computer, scanner, printer, smart phone, digital camera, audio devices, website, social media and so on. Their features were also explained in terms of portability, applicability, storage, expansion, etc. The paper identified some benefits of digitalization of personnel management to include: improved communication, accessibility, productivity, accuracy, task simplification, activity tracking, innovative and the like. However, some challenges such as disruptive power supply, complex brand of technology, lack of skill, inadequate physical infrastructure, poor data handling, financial limitation, resistance to change and tracking cyber security were identify. The paper thus suggested: steady evaluation of present state of secondary school personnel management in terms of digitalization to find out problems in order to ameliorate them, teaching ICT skills to personnel in the schools, provision of functional ICT with regular power supply, creating digital spaces and support for continuing digital development, etc, as some of the ways of improving digitalization of personnel management in secondary schools.

Keywords: Digitalization, Digitization, Personnel management, Digital transformation, secondary school, Administration.

Introduction

Digitalization is known to be the use of digital technologies to change business model and provide avenue for value producing opportunities by driving increased productivity for all operations. The era of digitalization is very real and has faced educational institutions. Various institutions are now marked by this technological advancement. Digital administration has become the most talked about topic in the modern world today as it is becoming uneasy to cope with analogue system. Use of digital materials in administrative activities is now a blind spot. Technology is changing every single day. There is need to be constantly on the move and be ahead of the game by incorporating information communication technology (ICT) in routine administration. In the management of human resources, ICT is of great demand. It includes a sum of digital tools to communicate, create, disseminate, store and manage information. In the education industry, digitalization is making its way and changing administration for better. As education progresses, new ways of doing things have to be embraced, new digital administrative strategies have to be applied. School administrators have to learn how to use and adopt the new technology, as well as being able to learn by themselves the new skills. Thus the focus has shifted from whether or not to embrace digitalization, from the old to the new process of using less paper for administrative transactions, to the needful digitalization in this dispensation.

The Concept: Digitalization

In the context of technology, digital refers to electronic devices and systems that operate using binary code made up of figures and words. A digital device, as defined by Demertini et al (2020) is a piece of physical equipment that uses digital data. He described such general purpose digital devices to include desktops and laptops that are commonly used in work places for word processing. Digital devices use code to represent data such as texts, images and sounds which can be manipulated and transmitted electronically. The devices use digital technology to process and transmit data such as phone calls, messages and mails. Demartini and the co-authors explained further that digital systems are designed to store, process and communicate information in digital form and manage internal processes to enhance efficiency and effectiveness. European Commission (2019) defines digitalization as incorporation of digital technologies into business or social processes with the goal of improving them. Misiamkova (2021) describes it as the process of converting information into digital format or computer-readable; taking an analogue process and changing it to a digital form without any difference in the change to the process itself. He list examples of digitalization such as scanning a picture, uploading paper documents or converting a report into portable document format (PDF) and storing it in a computer. In other words, digitalization means converting something to digital form. That is digitalization. It is all about developing and improving processes, changing workflows with digital solution to improve manual system. It is simply the converting of hard or paper files and documents into digital files and documents; using digital technologies to transform operations and experiences. The process changes analogue assets to digital format through integration of digital technologies and digitized data. In this format, information is organized into discrete units of data that can be flexibly addressed. It entails adaptation of a process to be operated with the use of computers. The result is representation of documents, images, sounds or signals by generating series of numbers that describe a discrete set of points. The digitalization process seems to begin with converting the information into the electronically stored devices. Thus digitalization is transformative.

In personnel management, digital transformation is a paradigm shift to reshape administration by leveraging technologies. The digital transformation integrates the digital technologies into all areas of administration of personnel, and fundamentally changing how the administrator operates and delivers values from manual to electronic system. Digital transformation examples may include: information technology modernization such as switching from cloudy environment of paper and file work and being remote ready to access them electronically, implementing mobile applications, and re-skilling the personnel for constant connectivity. Summarily, digitalization of personnel management means using desktop computers, mobile devices, software application, the internet and other digital tools in the process of personnel management to improve efficiency, effectiveness and productivity.

Digitalization vs. Digitization

Digitalization and digitization are two concept often heard in digital environment. One may easily be confused with the meaning of the two words. The concept varies in the aspect of purpose and outcome. It becomes necessary to differentiate these terms and identify the relationship of the common concepts for clear understanding. In the writings of prominent scholars such as Milroy (2020), Doukakis et al (2020), Haleem et al (2022), Demissie et al (2022) and Tanti et al (2023), the relationship of the two concepts were deducted as follows:

1. Digitalization refers to the process of converting physical objects into digital form, while digitization is to feed the computer with the physical objects, materials, images, etc.
2. In digitization, data is encoded into the system, while digitalization uses the digital tools to improve the process.
3. Digitalization is used to accomplish goals such as increasing operational efficiency, minimizing human errors and enabling data analysis while digitization reduces paper usage and saves storage space. Digitization is the data bank of information.
4. Digitization focuses on recording data, while digitalization is concerned with developing processes to improve the manual system.
5. Digitization transforms information from manual to digital, whereas Digitalization involves using technologies to personalize the services and practices.
6. Digitization involves changing handwritten records into digital form while Digitalization is using digital tools to improve processes.

7. Digitization concentrates on data conversion whereas Digitalization is all about improving the processes with digital solution.
8. Digitalization deals with information processing, while Digitization describes the pure digital conversion of existing data.
9. While digitization means changing analog data into digital form, digitalization integrates computing and communication facilities into operations so as to minimize processes, enhance efficiency and drive innovation.
10. Digitalization renews the existing operational model in the light of technology while Digitization is the software that upholds the automated information.

However, the foregoing authors maintain similar expression of the two terms in different words. The common factor in all is that digitization and digitalization serve as the path towards digital transformation which is the highest level. Digital transformation occurs with the use of digital technologies and their integration in the organization. Digitalization, Digitization and Digital transformation are three concepts that are crucial for adaptation in the area of personnel management.

Digital transformation begins with data that is encoded into the system (digitization) which is then used by the digital device computer to improve the process of digitalization. Nevertheless, digitalization and digitization are elements of digital transformation that creates new technological environment not only in personnel management but also in every administrative process.

Some Digital Devices for Personnel Management

There are diverse set of technological tools and resources that could be used to create, store, transmit, share or disseminate information in personnel management. Personnel managements need sets of ICT tools to guide communication and management of routine tasks. There are basic requirements for a digital office. They can be automatically and constantly updated to ensure not working with obsolete systems and forms. The devices are intended to be adaptable depending on different situations. Items can be removed or added but the fact is that they can be relied on, in order to stay connected to the personnel in the organization. The digital devices serve as tool for social interaction and make valuable contribution in the context of personnel administration and general services too.

Hence the underlisted devices, though not exhaustive for creating digital office of a personnel manager, were highlighted upon to include the following:-

1. **Computer** – This can be in form of desktop or laptop with their basic building blocks like CPU, memories, keyboards and other displays. Computer is an electronic device used to type, store, retrieve, send mails, process data and manipulation information for some results, based on programmes.
2. **Scanner** – The machine converts physical document into digital files that can be edited, stored and shared electronically.
3. **Printer** – This is a device that prints documents and images onto paper or other materials. It is connected to a computer to use spreadsheets to create documents that are printed out of the machine. The printed output becomes the hard copy.
4. **Smart phone** – This is a cellular telephone with integrated computer features such as operating system, web browsing and ability to run software applications. It is a sophiscated device with a virtual touchscreen and easy use as part of a person's work.
5. **Wall charger –** This is an appliance for inserting a charge of power; a device for charging storage batteries, it infuses energy into another objects like computers, smartphones and other electronic gadgets.
6. **Digital Camera –** It is an electronic image sensor with a lens reflex used to project image of an object unto a surface for record or translation into electrical impulses. Videos for capturing images are inclusive in this device.
7. **Clocking device –** This is a machine designed for checking staff attendance and punctuality by using fingerprint and password suitable for the office. It tracks and monitors when individuals start and finish work.
8. **Digital audio device –** This is a digital device that has a build-in microphone and audio software for recording external sounds. It converts speeches and sounds for use in other digital devices like the computer, smartphones, etc. This technology is used to record, store, manipulate, generate and reproduce sounds or speeches that have been encoded.

9. **Social Media –** This is a digital technology that allows sharing of ideas and information, including texts and visuals through virtual networks, communities and groups. It is a means of interactions among people, in which they create and exchange information. It facilitates aggregation of interests, consents and other forms of expression.
10. **Network interface –** This is a computer hardware component that connects a computer to a network. It is a network adapter that uses an adapter card to plug into the motherboard and connect through cabling. An example is a Universal Serial Bus (USB) adapter that can connect to the Wi-fi network. It allows an interconnection for communication amongst groups.
11. **Website –** This is a page located under a single domain produced by a single person or organization. It provides essential information about the person or organization. Website is made available online to be visited by the concerned persons.

Features of Digital Devices

1. **Portability** – They are small in size compared to analog. They have the ability to be easily carried about. The portability of a laptop is an example.
2. **Applicability** – Digital devices have the quality of being appropriate, relevant and suitable. They are capable of affecting and influencing the desired changes.
3. **Storage** – They have the method of storing information or data for future use. They retain data either temporarily or permanently, allowing user to preserve information and raw data.
4. **Expansion** – Digital devices have the act of increasing things in size, volume, quantity or scope. They can build up, spread or multiple information.
5. **Performance** – This is a continuous action or process of performing a task or function. They have the capacity of carrying out, execution, effectuation or implementation of tasks into accomplishment.
6. **Low power consumption** – Most digital devices or systems operate by minimizing energy consumption through specific technological designs.
7. **Security features** – Digital devices processors have in-built mechanism and functionalities designed to enhance the security and protection of the software applications that run on it. Examples are the PIN, password, encryption, key and so on. These are measures that control and ensure confidentiality and integrity.

Benefits of Digitalization in Personnel Management

1. **Improved communication:** Digitalization makes communication easy and immediate as at when due. School manager can simply leave a message or make announcement in the general digital forum or platform without having to gather everyone or waiting to go through the trouble of convening a staff meeting. Staff can ask questions and get timely feedback and response as well as participate in discussion of important issues that require immediate attention. When the personnel manager communicates effectively, both the sender and receiver feels satisfied and there will be no room for conflict.
2. **Accessibility –** Today's digital world helps constant access to up-to-date information. Digitalization gives the potential to share knowledge, ideas and views among staff. It has the ability to avail solution 24/7 to matters relating to personnel. Video conferencing enables to share documents, thoughts and ideas amongst staff, thereby making staffs to work as a team. Digitalization makes information available and reachable through usable websites; affording the opportunity to members of the group to acquire the same information, engage in the same interaction and enjoy the same services in an equally effective manner. Moreso, digitalization enables real-time sharing of activities through network.
3. **Productivity:** Digitalization helps accomplishment of task; showing how well a person does a piece of work. Through some digital devices, school staff performances can be easily measured and compared in terms of output with the amount of inputs used to produce the service.
4. **Accountability:** Digitalization creates facts and conditions of making every staff accountable, responsible, liable, answerable and reporting in the work place. Digital administration allows administrators to have more control over their staff, creating an environment where staff are more accountable for their schedules and have more control over what they do and how they do it.
5. **Accuracy:** The principle of garbage in garbage out (GIGO) in computing, which refers to the idea that in any system; the quality of output is determined by the quality of the input, not withstanding,

digitalization provides data accuracy. It reduces errors associated with information processing and somehow gives error-free records which the personnel manager can use as reliable source of information.

6. **Cost reduction:** Digitalization improves spending efficiency. It decreases office expenses to maximize profits, helping generating short-term savings from outside services. Thus it saves administrative costs by reducing staff numbers and travel requirements.

7. **Task simplification:** With digitalization, administrative tasks can be accomplished much easier. Such devices as digital camera/video editor, social media scheduler and so on facilitate workflow, simplifies task and reduces burden on the personnel manager.

8. **Stronger relationship:** On line community chart groups like the zoom, conference call, etc serves more. The structural discussion environment can be used to build friendly groups in school. People often feel more at ease sharing with others online rather than in person.

9. **Activity tracking:** Digitalization is useful for keeping workers in office. Such digital devices as clocking machine serves as accurate time monitoring for staff attendance. The gadget can easily calculate and record overtime hours, making payroll calculations more simple.

10. **Innovative:** Digitalization alters the way works had been done in office and renews it with new methods and advancement in technology, thus bringing improvement in offering personnel management services. The digital resources, virtual conferencing and all online transactions are continuous trends in personnel management that enhance and create new opportunities for more meaningful and comprehensive experiences for staff to expand their technical skills, enabling them to compete with others in different units.

Challenges in Digital Transformation of Personnel Management

Despite numerous advantages, digitalization of personnel management in secondary schools entail inherent challenges. The drawbacks of efficient digital personnel management system may include:-

1. **Disruptive Power Supply**: All the gadgets required for digitalization are electricity dependent. The impact of inadequate power supply limits access to the digital materials. It could also crash valuable electronics that are not protected.

2. **Technology:** Complex brands of technological gadgets have rapidly been increasing. This may result in difficulty of keeping up to date digitalization, especially when there is limited guidance and access to tutorials to help computer operators become more comfortable with the latest software.

3. **Lack of Skill:** This include lack of expertise, amateur, untalented and the skill gap. It means inexperienced, incapable, unqualified and incompetent persons to handle digitalization. Lack of knowledge and skill is a serious obstacle to using ICT. Not having a high level of skill and lack of limited training opportunities to familiarize users with the new system in computer operation is a big challenge.

4. **Inadequate physical infrastructure:** Infrastructural services are often inadequate to meet demands, when infrastructure services are of low quality or unreliable, many areas of digitalization become un-served. Inadequate infrastructure is a constraint on digitalization.

5. **Poor data Handling:** Bad data refers to inaccurate, incomplete or inconsistent information that are fed into the computer system, either noticed or unnoticed. This can wreak havoc on personnel management decision making.

6. **Financial Limitation:** A condition of inadequate budgeting for administrative cost and maintenance of digitalization remains greater constraint. Financial constraints lead to inability to anticipate future financial requirement resulting to overlooked needs. This in turn brings about inefficiency in management.

7. **Resistance of Digitalization:** Digitalization can be difficult where staff have more experience with doing things manually. Making the shift from manual to automated system might be troublesome and demotivating.

8. **Tackling Cyber Security:-** Cyber threats are incessant. Nothing is ever fully secured. Anything connected can be tracked. The key to secure app development is not easy and if this risk is not attended to, it has the intent of destroying, stealing or disrupting data and causing other data breaches.

Improving Digitalization of Personnel Management in Secondary School

There is need to find out how personnel management in secondary schools is doing in terms of digitalization and how to plan the journey from now to then. A new vision and perspective in this digital age is necessary. Improving digitalization of personnel management requires evaluation of the current state of the schools digitalization as the main starting point and then draw the action plan in the field of digital competence of school personnel. The findings of European Union (2019) was that the level of preparedness of school administrators is key to innovation of digital transformation, which is a necessity today. The commission said that successful management of digitalization processes requires a strategic approach at both national and state level, involving experts in consultation and support during implementation, to enable school leaders prepare with a clear intention of digital transformation.

Some main areas for targeted steps to transform and move personnel management in secondary school to digital includes:

1. **Evaluation of current state of secondary school personnel management in terms of digitalization**: This entails studying the present situations of secondary schools personnel management during this digital era, to find out the problem or challenges, in a bid to ameliorate them through digitalization action plan.

2. **Teaching ITC Skills to Secondary School Personnel:** The ICT Skill training designed to enable participate improve their practices with the use of specific digital tools such as smart phones, internet browsing, data processing and information presentation, will help the personnel to operate confidently, effectively and independently in work and everyday life.

3. **Provision of Functional ICT in Secondary Schools**: Self contained information communication technologies with use of power generating plant that accomplish specific tasks need to be provided in schools. Having the ICT shows a level of starting point in the digitalization.

4. Digital **Space**: Creating part of cyberspace where digital devices and materials are displayed for easy accessibility and use, will make great improvement in secondary school personnel management.

5. **Support of Continuing Digital Development:-** There is need to have a form of financial and technical support to make sure that ongoing digitalization is sustained. A systematic enlightenment programmes like conferences, seminar/workshop is needed to understand current digitalization trends. This will also help adoption of responsible perspective of digitalization in schools.

Conclusion

As management landscape changes rapidly towards modern technology, personnel managers need to adopt and embrace digital transformation initiatives across various domains. Understanding the potential advantages that arise in digitalization, personnel managers should embrace digital transformation in every ramification. Again, recognizing the challenges, meaningful digitalization of personnel management in secondary schools should aim at transformation as a community of actors involving government, education leaders and school administrators to start up and improve the quality. This ambitious goal requires deep awareness of modern administration in relation to personnel management.

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