

Assessing staff digital literacy level vs attitude toward online teaching and learning

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Abstract

Education re-engineering is becoming a cornerstone of curriculum review and transformation at different institutions of higher learning as well as schools in the private and public sectors, though decisions for innovation and creativity are the pillars of e-teaching and e-learning administration and management. This necessitated debates among policy makers and curriculum implementation sections, as to what the best ways of assessing staff digital literacy as a determining factor for a positive attitude toward online teaching and learning are. This paper aimed at positioning a staff digital literacy level versus attitude toward online teaching and learning quadrant in the curriculum transformation interventions of various institutions to ensure that their policy intervention regarding online learning remains user-friendly and sector appropriate. Using a critical autobiographical narrative inquiry, this quadrant was developed to assist educational institutions, personnel, and other stakeholders with a unique tool to assess their staff's digital literacy level and the position of their attitude toward online teaching and learning. The quadrants consist of 4 sections: High Digital Literacy Level-Low Attitude Toward e-Teaching & Learning; High Digital Literacy Level-High Attitude Toward e-Teaching & Learning; Low Digital Literacy Level-Low Attitude Toward e-Teaching & Learning; Low Digital Literacy Level-High Attitude Toward e-Teaching & Learning. The quadrant used staff attitude as a yardstick for the effective implementation of online learning initiatives in the education sector. The quadrants also serve as an educational re-engineering intervention strategy for the society 4.0/5.0 curriculum professionals.

Keywords: digital literacy, e-teaching, online evangelism, staff attitude, online self-efficacy, education re-engineering

Introduction

Various national and international documents such as the Sustainable Development Goals (SDGs) require institutions of Higher Learning as well as all those that are involved in education to transform and re-engineer their service delivery to ensure that there is a provision of quality education that will improve quality of life for citizens. This came because of a rapid change in the climatic conditions as well as other natural disasters such as floods, and epidemics like COVID-19. Though education has been offered mainly through traditional modes of face-to-face classes, the changes and proliferation of Information and Communication Technologies (ICTs) necessitate swift changes in the delivery of education while at the same time maintaining quality and on-time delivery of services (Nikou & Aavakare, 2021).

Various educational institutions be it universities, colleges or schools in various countries have started implementing online education, to ensure that changes in climatic conditions or the break-out of pandemics such as COVID-19 will not affect the delivery of educational services in any way (Shihomeka, 2021). This serves as a response to the demand of the 4th industrial Revolution (4IR) and education 4.0 which requires the use of Artificial Intelligence, Machine learning, and the Internet of Things (IoT) as means of educational service transformation. Such demands came with extra costs of ensuring that, staff members be they teachers, lecturers, administrators as well as students or learners need to acquire extra digital skills that will enable them to operate freely and holistically in the delivery of online education (Butler-Adam, 2018; Spante, et al. 2018). Such skills are not easy to acquire as some staff members are likely to have a negative attitude toward these instruments. Therefore, administrators may find it difficult to implement these online strategies which in turn will affect educational service provision. Hence, there is a need for institutions to have a tool they are using to

determine staff digital literacy and evaluate their attitude toward e-teaching and e-learning. This chapter developed a tool that can help administrators and policymakers craft policies and guidelines that will help them to have a smooth implementation of e-teaching and e-learning in different educational institutions.

Necessity of digital literacy among teaching and learning staff members

Being relevant and skilled in the industry demands that a staff member invest continuously in lifelong learning skills acquisition programs (International Labour Organisation, 2021). This is not only the responsibility of individual staff members but also that of the employer to make sure that employees are equipped with the 21st-century skills to remain relevant in their fields. Teachers and lecturers are the key implementers of e-teaching and e-learning interventions in their respective institutions and being digitally literate and possessing a positive attitude toward e-teaching and e-learning is becoming a necessity rather than a complementary skill (Burçin Hamutoğ; et al., 2019). A digital literate educator will be able to plan, develop, assess, evaluate, deliver, and monitor online learning and teaching with minimal intervention from a supervisor by using various digital devices or gadgets such as mobile phones, laptops with applications such as WhatsApp, Facebook, Learning Management Systems e.g., Moodle, Blackboards and so on. This enables them to search for extra materials, and teaching aids, prepare lessons, disseminate teaching and learning materials, and maintain communication with their learners or students. By that, the ever disparities in terms of educational delivery due to distance or location are reduced as members of the society will be able to attend classes, write tests and examinations, engage their lecturers/teachers as well enquire about their academic progression online (Shihomeka, 2021). It may result in what we call Return on Investment (ROI) as in the long run students will save more money in the process, but they will also acquire skills and certificates.

To function in this highly digitalised educational environment where most of the students at universities or colleges, or learners at schools are said to be digitally savvy and own the latest devices, as an educator you need to continuously upgrade your skills through various Continuous and Professional Development courses that are offered formally or informally (Ali, 2019). Digital literacy is one of the key skills needed for a staff member to be able to operate digital media efficiently and responsibly for the benefit of his/her class, school, or institution. As such several computer literacy workshops are conducted in different countries and huge investments are being made in digital technologies such as smartboards, Learning Management System (LMS) acquisition and internet connectivity at various institutions even through the distribution of pocket Wi-Fi devices in Namibia. These efforts are aimed at ensuring that online learning and teaching are implemented successfully. As an experienced ICT4D educator both at secondary school and university levels in Namibia, the author observed and identified a need for institutions to have a tool to assess both the staff's digital literacy level and their attitude towards online teaching and learning. Hence, he proposed a quadrant known as the Staff Digital Literacy Level vs Attitude toward Online Teaching and Learning Quadrant as discussed in the next sections.

Overview of staff digital literacy vs attitude toward e-teaching and e-learning

Digital literacy among staff members in different organisation remains a challenge and will continue to impede education service provision if it is not adequately addressed and tackled (Tang & Chaw, 2022). This is exacerbated by the fact that technologies are ever evolving and changing at a faster speed. Some staff members especially those working in remote or rural areas who do not own these

devices are regarded as the most technologically marginalised ones in terms of digital literacy skills (Shihomeka, 2021). This can be the case since even if the will to acquire these skills is there, the platform where these skills can be acquired and applied is not there. The digital literacy level of these staff members is sometimes determined by the fear of the unknown, culture and beliefs, societal pressure and social pressure, and the environment within which a person finds him/herself (UNESCO, 2021). Hence, administrators in this refer to educational managers be it at the school level or university should continuously keep on assessing the literacy level of their staff members through needs analysis in their organisations and respond to these needs through the provision of learning and development interventions.

Various works of literature also indicated that digital literacy skills are also affected negatively or positively by the attitude of a staff member be it a teacher, lecturer, or professor toward online learning. If such, a staff member strongly convinced him/herself that he/she will not cope and cannot learn these digital skills, that staff member remains stuck in the traditional way of delivering educational service (Li & Lee, 2016; Tang & Chaw, 2022; Li & Yu, 2022). This may create a learning and teaching gap between what staff members are teaching their students and what these students would like to learn. The most contributing factors to the staff attitude are advanced age and close to retirement, cultural beliefs, inadequate exposure to digital media, low self-esteem, self-pride, fear of the unknown, and lack of interest or curiosity among staff members. These can only be countered if educational managers are continuously exposing these members to digital devices and platforms to develop their interests and hope in learning.

Materials and methods

Using a critical autobiographical narrative inquiry, this quadrant was developed to assist educational institutions, personnel, and other stakeholders with a unique tool to assess their staff's digital literacy level and the position of their attitude toward online teaching and learning. The author served as a researcher and a participant in this study and used his over 17 years in the field of education at secondary schools, and university teaching as a good distance education in Namibia. During his teaching career, he kept a reflective diary when planning, training, and delivering online learning sessions to students and staff members. The author served as a tutor, tutor-marker, senior moderator, assignment setter and marker, and workshop facilitator at institutions such as Namibian College for Open Learning (NAMCOL), Institute of Open Learning (IOL), Namibia University of Science and Technology (NUST), University of Namibia (UNAM), Management College of Southern Africa, Regent Business School, just to mention but a few. The roles played included setting, marking, and moderating assessments online. During this process, a conclusion was reached that staff members' attitudes toward online learning are serving as a contributing factor to the implementation of online learning.

Assessing staff digital literacy level vs attitude toward online teaching and learning

Curriculum formulation and implementation face a re-engineering phase in the contemporary world. This requires curriculum drafters or designers to consider digital literacy as a pre-requisite skill for a 21st-century educator. As such, the digital and literacy level informs the administrator of the staff's attitude toward the implementation of digital services and serves as a motivating factor to offer this service with a high level of proficiency and dedication. My recent extensive engagement in the educational technologies sector revealed four categories of online educators. These are Online Evangelism Informer (OEI); Regressive Digital Sensitive (RDS); Forward-Fluent Digital Initiator (FFDI)

and Progressive Digital Romance (PDR). Based on their key characteristics, these online educators are placed under each of the four quadrants in this Chapter. The quadrants are as follow: High DLL-Low ATeTL; High DLL-High ATeTL; Low DLL-Low ATeTL and Low DLL-High ATeTL with their definitive characteristics that are relevant to educational administrators, especially curriculum transformation panels at various educational institutions as diagrammatically shown in the diagram below:

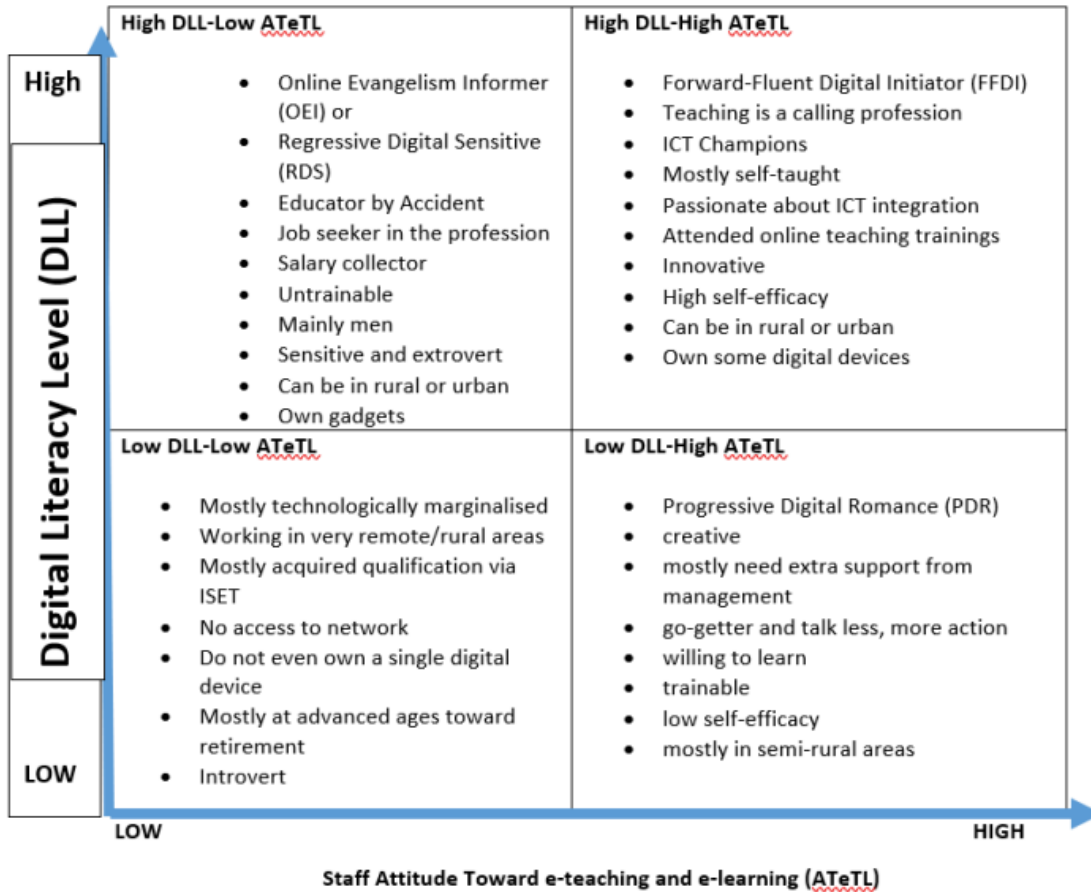


Figure 1: Shihomeka' s Assessing Staff Digital Literacy Level Vs Attitude towards Online Teaching and Learning Quadrant (Shihomeka, 2020)

Figure1 is deemed fit to be used at the beginning of curriculum transformation or review or when the integration of ICTs in teaching and learning is being planned and strategized to be used as one of the enhancement models to counter the effect of digitalisation in education. The institution will be able to tell if team members in that institution are ready to implement online learning or probably, they need remedial actions to be taken. It will also assist the institution with budgetary planning as well as infrastructural plans. The components of the quadrants are discussed below:

Low DLL-Low ATeTL

Starting at the bottom left corner of the quadrant, we have a group of staff members with low digital literacy levels and low attitudes toward e-teaching and e-learning. This is the most important group that, each leader or administrator needs to look out for as failure to integrate them and orientate them to digitalisation of educational services and workshops, training, and other interventions may jeopardise the extent to which online learning will be implemented in that school, organisation, or university. The following are the key traits of staff members with low digital literacy levels and low attitudes toward e-teaching and e-learning:

Technologically marginalised

These staff members are technologically marginalised in the sense that they do not have access to digital media, and technologies and in most cases a month can pass by without even using a digital gadget. Most of these people are unemployed, but even their interest in owning or acquiring digital gadgets is low.

Working in very remote areas

Based on practical observations, the majority of these staff members are working in rural areas or semi-remote areas of the country where access to these gadgets or applications does not seem like a necessity. There are several reasons for poor access to these platforms and devices, which can be listed as unreliable electricity, literacy level and understanding of community issues, and affordability or availability of supermarkets where they can buy these devices. Hence, access and exposure can be serious contributing factors to the negativity and digital illiteracy level of staff members.

Mostly acquired qualification via in-service training programmes

Observations revealed that teachers at primary and secondary schools in rural areas started their careers while they were unqualified and underqualified. Since they did not meet the requirements to be qualified teachers, they furthered their studies through distance correspondence until they obtained relevant qualifications. They did this sometimes without physically attending classes at a specific university or literally; they only attended what is known as vacation classes, whereby they only attend classes for a limited period. These staff members are hardly exposed equally to digital media and technologies. Some of them only covered these devices theoretically without even seeing them physically. Hence, how do you expect this person to develop interest and curiosity in teaching electronically if they are also learners? Additionally, these teachers or staff members are even likely to be defensive and influence the young ones that, you can pass and propel without using digital devices or platforms.

No access to the network

As mentioned earlier, ruralisation is a big issue in the global south. Most of the areas or schools where these staff members are working do not have access to a network or reliable network. This can range from things such as mobile phone connectivity, internet connectivity, as well as telephonic access. Also residing in rural areas has its own shortcomings, such as the distance to travel to a nearby place where you can make use of internet facilities or call someone using your mobile to participate in a digital community of practice.

Ownership of digital device

Another key impediment is that employees in this category are likely not to own not even a mobile phone, a laptop, or any other digital device. This is not that they do not want to own it but sometimes due to affordability or lack of exposure to the importance of these devices. Therefore, requesting them to use these devices will create a digital shock as they need to be introduced to this slowly.

Advanced ages toward retirement

Staff members at an advanced stage or age to retirement are mostly falling into this category. What we know is that we have some members who are more technologically savvy and are always willing

to learn more. However, the majority will tell you that they are retiring soon and what is the use of learning how to use digital devices?

Introvert

Low digital literacy level staff members are mainly not talkative employees and are not free to express themselves. These people usually are anti-social and like their privacy. As a result, even hearing about the latest technological developments or devices does not exist.

Low DLL-High ATeTL

The next category consists of staff members who have low digital literacy levels but, whose attitude toward e-teaching and e-learning is high. In this case, you will find employees who are willing to learn despite the circumstances or predicaments they are in. These staff members can easily serve as an accelerator of e-teaching and e-learning interventions in schools or universities as an investment in these programmes will be used. The only area that needs to be tapped into is their digital literacy skills to ensure that they will be able to operate these devices and use them optimally. Usually, it is not difficult to train these as they are willing to acquire the skills. All they need is just an environment to expose them and give them access to these facilities. The key features for the members are explained below:

Progressive Digital Romance (PDR)

Staff members in this category are usually looking forward to learning new things and always doing things on their own. They developed what we call longevity to learn and hence they are ever exploring through self-directed learning strategies. In this category, you will find a staff member who is investing money in short courses without waiting for the employer to do that for him/herself. This is the strength that this group has compared to the first one. Therefore, acquiring skills will not be a problem.

Creative and need extra support from management

Though staff members in this group have low digital literacy levels, they are best characterised by their creative skills using self-directed learning approaches. Sometimes they learn by doing through drills and practices. In addition, these members require extra support from the senior management team to encourage and motivate them to do better and remain digital champions of their departments/units/schools or universities. Support for these members might range from capacity-building workshops or learning and development interventions as well as employee recognition incentives.

Go-getter and talk less, more action

Though there is creative and innovative stamina, employees in this quadrant, are introverted, talk less during meetings, are observable, focus more on service delivery, and are usually anti-social. This is the reason why in most cases they may not be recognised or noticed by their managers. However, their colleagues might notice that these employees are more knowledgeable only that they are not certified in the field.

Willingness to learn and trainable

As mentioned earlier, in this quadrant, since these employees are passionate about digitalisation, they are more willing to learn and experience new things as well as can easily be trained to be ICT

champions in their units or departments. However, their willingness feature might be abused by the Administrators, and in most cases, you will find them overloaded with several tasks and responsibilities about digitalisation. Though naturally, they were supposed to earn collegial support, they might be seen as favourites of their managers and hence you will find them being victimised and to some extent harassed.

Low self-efficacy

The low digital level and high attitude toward online learning and teaching, are additionally described by low self-efficacy. Their strengths and creative passion can easily be killed or slowed down by negative criticisms. This is the reason why it is indicated that they need high-level management recognition and supporting services to remain strong and focused. The reason is to prevent staff members from deviating from their interests and what they enjoy the most with their peers.

High DLL-Low ATeTL

Based on this quadrant, there is another category of employees who are described as having high digital literacy skills or level but have a low attitude toward online learning and teaching. Though these employees were supposed to be useful and very crucial in the design, development, implementation, and evaluation of e-teaching and e-learning in a particular organisation, they are likely to be more influential among their colleagues who are less digitally literate. They might even discourage other employees since they strongly believe that e-teaching and e-learning are not effective or will not bear fruits as planned. The key features for these employees are as follows:

Online Evangelism Informer (OEI) or Regressive Digital Sensitive (RDS)

An online Evangelism Informer is an employee who usually talks about the benefits or good things about a system or application, and s/he is knowledgeable but if you give him or her a responsibility to use those skills s/he will not do it. Mostly these people are controlled by procrastination as well as exaggeration. In the same category, you will find employees who are known as Regressive Digital Sensitive. These employees are not cooperative in the department as they are always complaining about work that have to do with progressive processes. This group of employees is very influential and needs to be identified at an early stage of drafting an e-teaching and e-learning strategy for the organisation to avoid further employee-employee contamination. They are easy to identify as in most cases they possess university qualifications in this field but lack actions and only know how to talk.

An educator by accident

A good description for employees in this category is that initially they never wanted to be educators but due to the availability of courses or university programmes or their matric/grade 12 results, they ended up registering for an educational qualification. In addition, you will find that these are employees who were persuaded by their peers or parents to do educational programmes, and hence, to them sharing with and teaching others is not their business. We can further see that; at the university level, you might find those who became lecturers simply because they acquired master's and Doctoral degrees which are the entry requirements for lecturing positions in these organisations. As a manager, you need to identify these employees and draft remedial actions/interventions for them so that they will use their digital literacy skills for the benefit of the entire organisation.

Salary collector and untrainable

This quadrant is highly volatile as you are dealing with digitally literate employees who have a low attitude toward e-teaching and e-learning. Therefore, it is important that as a manager or administrator, you identify these employees. At this point, these employees are also usually only interested in their salaries at the end of the month and are untrainable as they hardly attend workshops, or even if they attend, they will not listen and come back with new knowledge and skills to transform their sections/departments or organisation.

Mainly men, sensitive and extroverts

Observations showed that employees in this category are males, very defensive, and extroverted. Their sensitivity part is that, if an administrator tries to correct or advise them, they defend themselves and always refer to their human rights and other legal documentation in the organisation. If you have these employees in the organisation, e-teaching and e-learning are likely to be implemented well as staff members will not do it, and if you question them, they will threaten you with legal cases.

Employees in rural or urban and own gadgets

The last feature in this quadrant is that employees of this caliber can be either in rural or urban areas and own private digital gadgets. In most cases, they are not even interested in using their gadgets to do official work as they expect the employer to provide them with such devices. Should the employer fail to provide them with a device, work will not be done as they will claim that they do not have any device to use. You can easily notice these employees during critical times especially, during the COVID-19 outbreak, when schools or universities were instructed to close and move to online learning. At that time, staff members were required to stay at home and not all employers provided their staff members with portable gadgets. Hence, these employees may claim that they cannot even read e-mails or respond to them attend classes or keep communicating with students as the employer did not provide them with gadgets/airtime, or credit. This has a negative effect on the implementation of e-teaching and e-learning as it will create an imbalance in the completion of course outlines or syllabi. Being in an administrative position, you need to identify these employees and speak to them individually to ensure that they will not feel attacked.

High DLL-High ATeTL

The last section of the quadrant consists of the employees who are referred to as Forward-Fluent Digital Initiators, possessing a high level of digital literacy level as well as a high attitude toward e-teaching and eLearning. This is an ideal situation that we all would like to see. However, it is very rare to find it in several organisations. If after assessment you find that your employees are in this category, you are safe as these people tend to work without being told and forced to do tasks as they are enjoying and more passionate about e-teaching and e-learning. The key traits of these employees are explained below:

Forward-Fluent Digital Initiator (FFDI)

These are employees who possess a high level of digital literacy level and are visionary and can come up with initiatives that are likely to assist them in designing, developing and implementing e-teaching and e-learning successfully without any failure. Usually, these employees always take lead in the digitisation of the curriculum or teaching and learning processes. They identify new ways of teaching, and new digital materials and share them with the team.

Teaching is a calling profession

Employees of this calibre are teachers or educators by nature. This literary means they joined the profession as they really would like to be in this profession. This can be attested to their high-level engagement and commitment to digital literacy initiatives as well as their positive attitude toward e-teaching and e-learning. They usually blame themselves in cases where they did not achieve their goals in a specific academic year i.e. students did not perform well.

ICT Champions and mostly self-taught

These employees are known even by their peers that, they are champions in ICT for Development (ICT4D), and usually their peers are always asking for assistance from them. Many of them, are self-taught and do not have university degrees in this field but they are excelling well using the skills acquired through professional development courses or programs.

Passionate about ICT integration and attended online teaching training

These are digital Influencers as the authors are referring to them in the field, though there are few in the field, they are ever talking about ICT integration, passionate, futuristic, goal-oriented, and forward-looking to the full digitalisation of the education sector. They have a strong conviction that ICT can assist learners/students to perform well. Mostly, they attend online refresher courses at their own expense as well as when the organisation avails funds or advises them to do so.

Innovative and High self-efficacy

Employees in this category have high self-esteem as well as an innovation appetite to come up with new ways or methods of teaching and learning.

Can be in rural or urban and own some digital devices

The last key trait is that staff members in this category can be in rural or urban areas and usually they also own their own devices. The good thing is that they can use their money or devices to develop new solutions or materials or access materials online for the benefit of their learners. They believe that education is a shared responsibility.

Discussions

Taking into consideration the necessity of digital literacy in education, especially among teachers or lecturers, institutions of higher learning are expected to develop curriculums that are contemporary and can infuse digital skills among their graduates. However, it should be noted that we have staff members from different communities, and backgrounds and with unique attitudes (Nikou & Aavakare, 2021; Link, & Marz, 2006; Ali, 2019). Some staff members possess high receptive abilities that will make them more relevant in this era as they acquire these skills with or without formal training or exposure by their employer. However, some employees may claim that they need the employer to take the lead in the provision of digital literacy training among their employees as well as providing devices or gadgets to be able to execute their duties. It is, therefore, important to know your staff members' level of digital literacy to avoid a blame shift attitude in the organisation that some people are not doing their jobs due to illiteracy, but you do not know which group of employees and what you can do about them. The quadrant developed in this article serves as an effective tool to assess your staff members' digital literacy level. You can do this at the beginning of each semester or yearly. The purpose is to know your staff members' digital abilities.

In this era, institutions are required to offer a blended type of learning whereby ICT integration is key. We are also trying to remove or narrow the digital divide in the education system, by ensuring that all qualified and those who are willing to learn are provided with that opportunity (Spante, et al., 2018). Therefore, online learning is the solution but the foundation for effective online learning and teaching is the staff's digital literacy level. In addition, literacy alone cannot solve the problem if the attitude of your staff members toward digitalisation is negative. Institutions should measure the attitude of their staff members so that those with negativity, can have a strategy developed to ensure that they will become positive contributors to the realisation of e-teaching and e-learning.

The quadrant touched on four key categories of staff members. These are low digital literacy level vs low attitude toward e-teaching and e-learning; high digital literacy level vs low attitude toward e-teaching and e-learning; Low digital literacy level vs high attitude toward e-teaching and e-learning as well as high digital literacy level vs high attitude toward e-teaching and e-learning. These categories are very crucial to an educational administrator as the development, design, implementation, and monitoring of online learning are likely to be affected if effective strategies are not developed to ensure that the identified categories are capacitated and empowered. Literature also indicated that culture, educational background, technophobia, digital divide, experience, and peer pressure are some of the factors that are likely to contribute to either positive or negative attitudes toward e-learning and e-teaching (Faloye, et al., 2022). Additionally, digital literacy cannot be entirely blamed on employers as individuals with passion and interest can also enrol in continuous professional development programs or learn through self-directed learning. Administrators are often faced with numerous cases as employees tend to be resistant and defensive when it comes to digitalisation. But if an assessment was conducted at the beginning, there could be a fair implementation process.

Conclusions and recommendations

Positioning staff's digital literacy level versus attitude toward online teaching and learning quadrant in the curriculum transformation interventions of various institutions and ensuring that institutional policy interventions with regards to online learning are user-friendly and sector-appropriate is becoming a key goal for any organisation. This might contribute to educational re-engineering intervention strategies for Society 5.0 curriculum professionals. This quadrant is developed to assist educational institutions, personnel, and other stakeholders with a unique tool to assess their staff's digital literacy level and the position of their attitude toward online teaching and learning. It consists of 4 sections: High Digital Literacy Level-Low Attitude Toward e-Teaching & Learning; High Digital Literacy Level-High Attitude Toward e-Teaching & Learning; Low Digital Literacy Level-Low Attitude Toward e-Teaching & Learning; Low Digital Literacy Level-High Attitude Toward e-Teaching & Learning. The quadrant used staff attitude as a yardstick for the effective implementation of online learning initiatives in the education sector. The quadrant can also serve as an educational re-engineering intervention strategy for the Society 4.0/5.0 curriculum professionals.

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