



Skills for the Workplace

Module Assignment Submission

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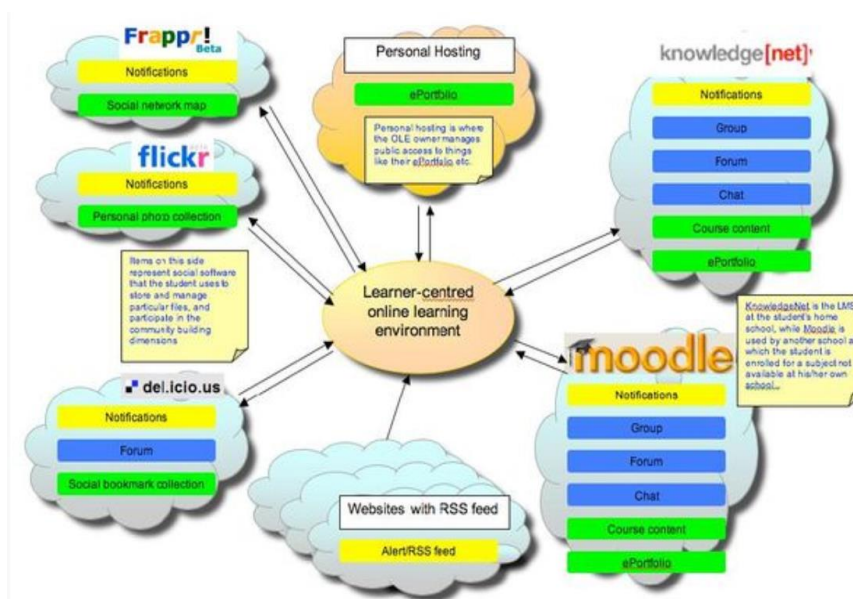
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Introduction:

The focus of this report is to examine the relationship between data, information, knowledge and wisdom. How capturing valuable information is essential in the knowledge economy market. This paper will also look at external factors and sustainability within knowledge and information management. Knowledge Management (KM) is fundamentally an asset to an organisation when managed well. However, despite the power of (KM), without the basic infrastructure in place, being able to communicate and share the knowledge can be found to prove difficult (Cobb, 2012). For example: The majority of higher institutions (universities) have the basic infrastructure in place for e- learning. The platform is essentially good for those who choose to learn using Information Communication Technology (ICT). However, in developing countries like “The Giant of Africa Nigeria”, they have issues with their infrastructure making e-learning more difficult to apply. Further discussion will look at recommendations of how to help individuals with physical, non-physical and mental impediments, have access to learning, knowledge and help create a global sustainable society.

Figure 1:



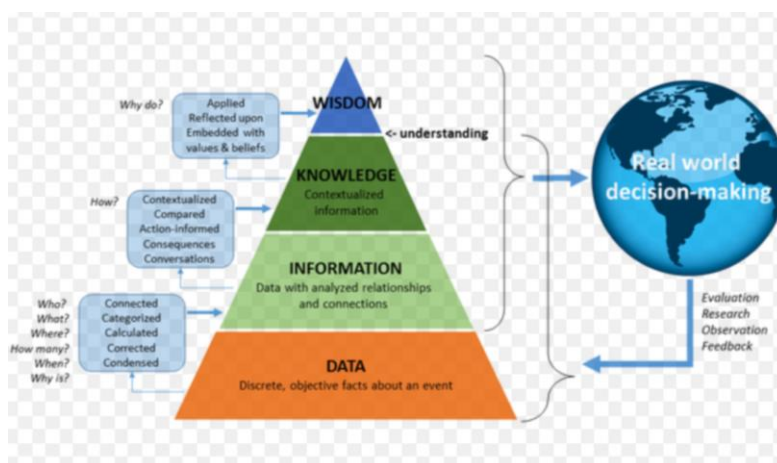
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SECTION 1:**Relationship Between Data, Information, Knowledge and Wisdom**

Understanding knowledge and knowledge management (KM) data, information and wisdom can be difficult to define. Academics commonly define knowledge as a derivative of information, which is derived from data (Fuller, 2015) Knowledge is information or data, orchestrated in a way that is beneficial to the organisation. The cynosure of (KM) is to codify and share knowledge that is most valuable to the organisation. Knowledge management shifts the focus from process to practice by using communication and collaboration helping people to improve in their job and life in general. According to (Ackoff, 1989), the human mind can be categorized into four parts, which are:

- Data: such as symbols.
- Information: data once processed becomes useful.
- Knowledge: applying both data and information.
- Wisdom: having a better understanding of anything with the knowledge obtained.

Figure 2:



Taken from: www.quora.com

Ackoff, (1989), also explains that the first three parts are related to the past; it deals with what has happened in the past enables one to know what sort of outcome will come to pass. Only the fourth part, wisdom, contributes with what the future holds. With wisdom,

people can create the prospect, being able to reshape the brain (neuroplasticity) for effective use. Being able to visualise what you aim to achieve (Harasym, 2008).

But to obtain wisdom is not an easy task; people must amalgamate the three parts, by doing so synergy is combined between the components (Mullins, 2013).

As an example, in a university the lecturer asks the class to solve a mathematical equation. The data is the number which is one, next is the information, which simply can be described as one plus one this information is now known. One plus one equates to two which is the knowledge that we get from adding the data together, therefore making wisdom a greater understanding of the knowledge we have gained.

The word data comes from the Latin word of Datum, back in the mid-17th century was a term used in philosophy. Data is a collection of facts on something that is known, like numbers, sounds and symbols. Experts further explain that the sequence of symbols can be interpreted in to a message. Data can be obtained from events such as surveys, objects, symbols and word of mouth, at times relating to what we know. In information studies data is raw. It simply exists and has no real significance beyond its existence (in and of itself). Data can exist in any form, some of which has no relevance, not all data is useful as by itself can have no meaning. For example, a student in the university will have a student ID number, the number is not useful to anyone, however, the university and student will be able make sense of the student number and put it to use when necessary.

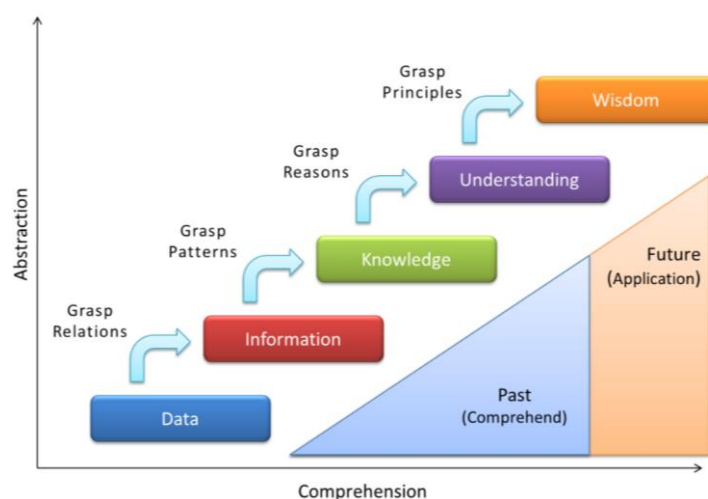


Figure 3:

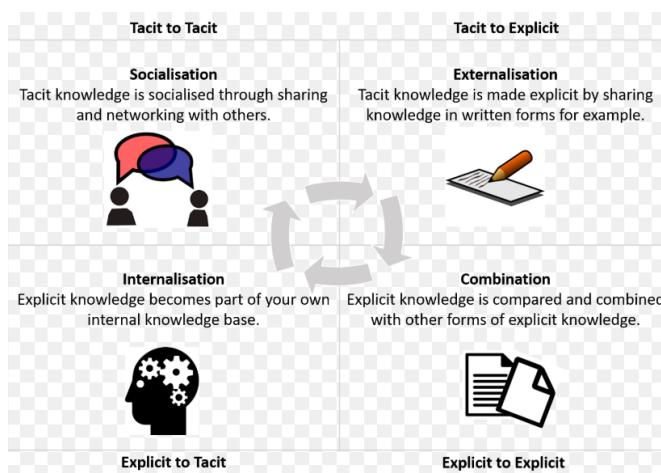
Taken from: www.medium.com

The next component information, can be described as a collection of data that we can get a better understanding or deeper meaning by learning the information from the data. Studies in (information management), show that information is data that has been interlinked, by doing so the data and information can become useful (Ackoff, 1989). Information is something everyone uses in their everyday walk of life, with the correct information can help reduce uncertainty, thereby maintaining and improving the decisions made. For example: university time tables knowing when to attend lectures, vitally important without this information you will not know when to attend lectures. Bank statements are important information and our useful for the individual, however, such information in the wrong hands can be detrimental, so some information must be kept sacred (Tacit). Information can come from a number of sources by communicating formally and informally.

- Formal communication structured
- Informal Communication un-structured

The third component is knowledge; knowledge is an upgraded version of information, with knowledge we can know the right thing to do on a consistent basis. Knowing is knowledge philosophers studied that epistemology is the central philosophy of attempting to find out the truth. Mullins (2008) defines learning with knowledge as a change of permanent kind. Which may result in a new understanding and knowledge gained through formal and informal processes. Tacit knowledge converted into explicit knowledge using moodle and online tools.

- Tacit Knowledge
- Explicit Knowledge



Taken from: www.google.com Figure 4:

The last component in the relationship between data, information and knowledge is wisdom. Wisdom is an accumulation of knowledge, a better understanding of something that over time will progress to wisdom. Wisdom is knowledge at a higher degree, wisdom evidently will make individuals apply the correct actions when making decisions. Wisdom is something you learn in time. Mullins (2013) acknowledges the concept of synergy one plus one equals three, whereby the learner, plus knowledge and wisdom acquired amounts to more than the sum of two parts.

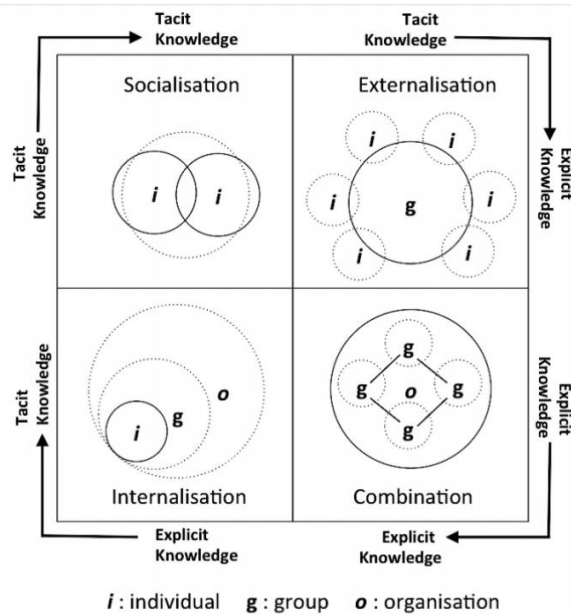
Relationship Between Individual knowledge and Organisational learning-knowledge:

Knowledge is often confabulated as an organisational resource, however, most knowledge management scholars agree that knowledge is essentially created by individuals (Erden et al., 2008). Knowledge management is an important part of organizational learning.

Organizational learning is found upon a systematic implementation of best practices throughout universities and organisations. Successful and well run institutes will often designate this responsibility to lecturers also the individuals. Knowledge management plays a pivotal role in organizational learning, especially when it is about identifying, documenting and making available the tacit knowledge of students, or teams. Also, providing the organizational and technological basis for systematic knowledge sharing.

Lam (2000) describes individual knowledge as one of the components of a firm's knowledge. The mind and physical skills of the students, or individuals when applied efficiently to execute tasks, solve problems, assignments and exams, form part of the universities knowledge base. Alumni's, scholars, students help form a central knowledge base and form a part of the knowledge management process. Nonaka and Takeuchi (1995), have a theory of organisational knowledge creation. The creation of organisational knowledge is a simultaneous process of "amplifying" knowledge created by individuals, and converting the knowledge from a tacit to an explicit form through four conversion modes: Socialisation, Externalisation, Combination and Internalisation.

- **Socialisation** sharing knowledge with students.
- **Externalisation** creates conceptual knowledge.
- **Combination** combines all the modes for a greater understanding.
- **Internalisation** knowledge becomes valuable.



Source: Nonaka and Konno (2005) Figure 5:

There are a number of concepts and theories of knowledge management that managers and individuals apply in accordance with our everyday lives.

Socialisation is defined as the “process of experiences shared and thereby formulating tacit knowledge. Such as shared mental models and technical skills” (Nonaka and Takeuchi 1995, p 62). In this mode, knowledge is acquired predominantly by observing, imitating, shadowing similarly to an apprenticeship scheme where you learn by doing (Nickols 2000). Subsequently, converting tacit knowledge into tacit knowledge.

Externalisation is a collective reflection of process creation (Nonaka and Takeuchi 1995, p 64). Here, tacit knowledge is converted into explicit knowledge. The tacit knowledge is conceptualised through writing, it converts tacit Knowledge into explicit.

Combination “involves amalgamating different bodies of explicit knowledge” (Nonaka & Takeuchi 1995, p 67). Whilst students are combining and exchanging knowledge by way of course materials, documents, emails, phone calls, books and so on. This mode, converts explicit knowledge to explicit knowledge. The combination generally leads to a better understanding, more in-depth level of knowledge (Nonaka and Toyama 2003).

Internalisation is the process by which knowledge becomes valuable. Similarly, to learning by doing (Nonaka and Takeuchi 1995). The “knowledge” is incorporated in the student’s

tacit knowledge through shared mental models or technical knowhow” (Nonaka et al., 2001, p 497). This process converts explicit knowledge into tacit knowledge.

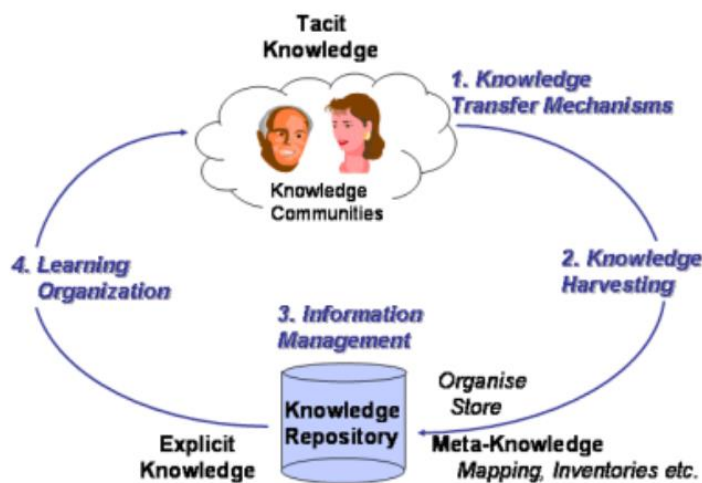


Figure 6:

Taken from: <https://corafowler.wordpress.com>

Conceptual Knowledge refers to the knowledge of,

- Understanding various concepts, principles, theories, and models.
- Learnt through reading, viewing, listening, experiencing, or thoughtful, reflective mental activity.
- Also can be referred to as Declarative Knowledge.

Contextual learning is based on a constructivist theory of teaching and learning.

- Learning takes place when teachers are able to present information in a way that students are able to construct meaning based on their own experiences.
- Contextual learning experiences include internships and studying abroad programs, among others.

Contextual learning also has the following characteristics:

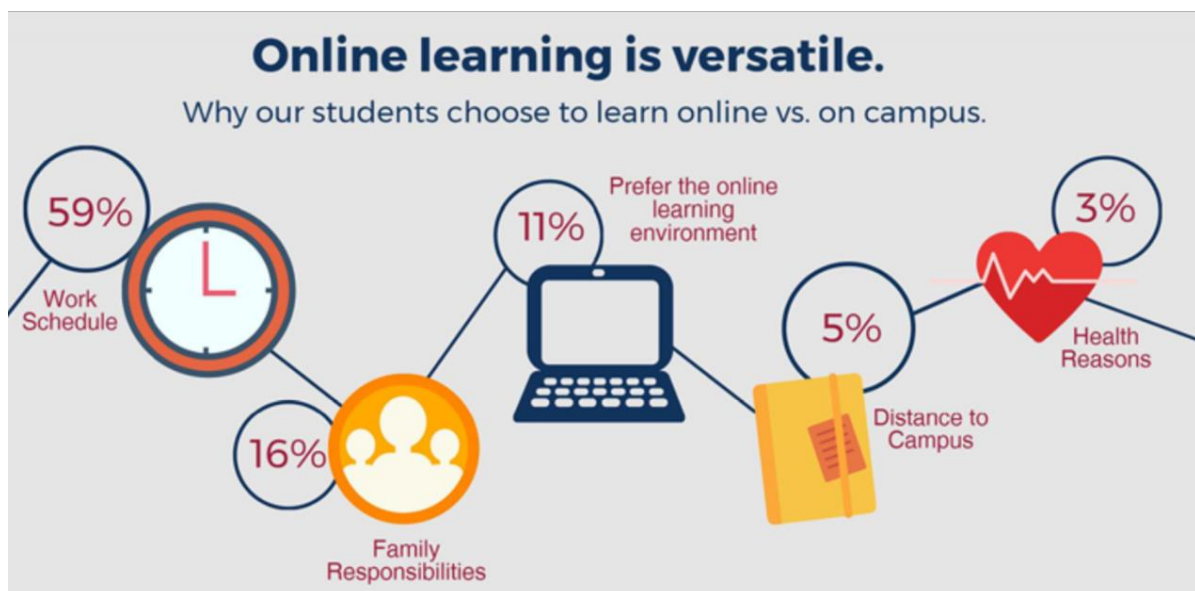
- Emphasis on problem solving
- Recognising that teaching and learning need to occur in multiple contexts
- Assisting students in learning
- Monitoring their learning

- Teaching the importance of diversity in a life context
- Encouraging students to learn from each other

Knowledge Assets:

In the fast and ever evolving current knowledge economy, it is becoming increasingly vital that higher education institutions (HEI) are able to recognise and evaluate their knowledge assets. By doing so will help attain a competitive advantage in the market. Knowledge is power and it is critically important to identify and understand what are the knowledge-based value drivers affecting academic pursuits. The Information and communication technology (ICT) revolution has inundated knowledge users with more information than ever before, even as the higher education marketplace is becoming more intricate.

However, with the vast amount of information available does not necessarily mean individuals will acquire more knowledge. More value is being added to education through investments, research, technological developments and innovations. Enabling literally anyone, anywhere access to e-learning and knowledge (Miller and Shamsie, 1996).



Taken from: www.google.com Figure 7:

According to Miller and Shamsie (1996), knowledge is recognised as a valuable asset that will continuously grow. Subsequently, maintaining a competitive advantage, in achieving higher educational goals (Seleim, et al., 2004). In addition, there is an increased interest in public organisations to enhance and maintain the production of knowledge dissemination to evaluate the effectiveness of knowledge resource management (Sanchez et al., 2006).

Leitner and Bornemann (2002) outline that as organisations which are mainly funded by the public, are challenged to be more transparent. This appeal for accountability requires disclosure for the social and economic outcomes of higher education.

- **Knowledge production:** a stronger orientation towards applied research (Gibbons, 1994)
- **Research institutions:** in both the private and public sector, helping to sustain and realise the global sustainable educational goals (Seleim, et al., 2004)
- **International research networks:** development has been rapid by the use of Information communication technologies, providing new innovative techniques for knowledge access (Leite and Pinho, 2016)

Evaluate Knowledge Assets:

Green (2007) definition of knowledge assets is knowledge-based resources, or indications of knowledge existence. These assets are held by an organisation that can transform knowledge assets, intellectual assets, intangible assets and intellectual capital. Once synergised can create value for the stakeholder and organisation. (European Commission, 2006). The effectiveness of the knowledge asset strategy is well manifested in relation to technological advances. Therefore, technology is defined as a socio-physical as there are specific physical elements involved. Boisot (1998) explains that knowledge assets include a number of intangible elements (resources, capabilities and competences. In contrast to physical assets that usually have a limited life span due to wear and tear, knowledge assets may in theory last forever. Given their open-ended value, there is no one-to-one correspondence between the effort required to create knowledge assets and the value of services they yield (Malhotra, 2003). The distinction between the terms data, information,

and knowledge is useful in explaining the contrast between physical assets and knowledge assets.

According to Malhotra (2003), data can be characterised as a property of things, as opposed to knowledge as a property of agents predisposing them to act in particular circumstances. Information is that subset of the data residing in things that activates an agent through the perceptual or cognitive filters, and in contrast to information, knowledge cannot be directly observed. Its existence can only conclude from the actions of agents. Hence, in contrast to the emphasis on tangible input-focused measures of physical assets, knowledge assets require understanding in terms of quality and content of performance outcomes.

SECTION 2:

Creating, Storing, Applying and Integrating Knowledge:

It is a necessity for an organisation to create, store, apply and integrate knowledge and evaluate its usefulness. Organisations across the globe have recognised the significance of integrating knowledge asset concepts and managing the process (Baporikar, 2018)

The Knowledge Management Processes: in the context of learning.

- Knowledge creation and acquisition – nurturing people with knowledge.
- Knowledge sharing – helping one another caring and sharing.
- Knowledge capture – capturing tacit knowledge as well as explicit knowledge.
- Knowledge preservation - This has to be captured and stored in databases.
- Knowledge application - applied to achieve competitive advantage.
- Knowledge evaluation – verification process to establish relevance and accuracy.

E-learning allows participants to acquire knowledge, share the knowledge, apply the knowledge to solve problems and store the knowledge for future use.



Figure 8:

Taken from: www.globalebusiness.com

Information can be gathered from various levels:

- Strategic Level, Executive Support System (ESS).
- Management Level, Management Support System (MSS).
- Knowledge Level, Knowledge Work System (KWS).
- Operational Level, Transaction Processing System (TPS).

Information technology plays a pivotal role in facilitating knowledge management. It is imperative that an effective information systems infrastructure is implemented to establish the objectives of knowledge management. A good infrastructure includes databases, computer networks and software. However, energy is an issue in Africa and this has an adverse effect on e-learning. Nevertheless, knowledge management and e-learning combined have helped create a virtual learning community. Subsequently, building an interactive learning environment for people. This helps the integration of knowledge management and e-learning (Chang, et al., 2004).

Intellectual Property Rights:

The definition of Intellectual property rights refers to property rights through patents, copyrights and trademarks. These property rights allow the holder to exercise a monopoly on the use of the item for a specified period of time (Omona and Weide, 2014)

Subject to the provisions of the Patents Act 1977, the Registered Designs Act 1949 and the Copyright, Designs and Patents Act 1988. E-learning materials for both learner and institution are governed by these acts. IPR is extremely important as continuous progress is inevitable, therefore when these new innovations are delivered it creates and promotes sustainable human development. Online tools and techniques are now paramount to give a better understanding to the masses about intellectual property rights. However, it can have its contradicting views. Do university copyright policies address key issues pertaining ownership of e-learning? Research has found that University and College Union (UCU) generally support the academic staff and claim they own the rights. However, on the other hand the Higher Education Funding Council for England (HEFCE), take the view that universities own the rights. The positions of both groups cannot seem to make common ground thus the divide continues (Omona and Weide, 2014)

Section 3:**Contributions of Knowledge Assets to E-Learning:**

Human resources combined with knowledge assets is the nucleus of what all high education investments aim to achieve. Their contributions locally, nationally and internationally are unprecedented. The drive in the knowledge economy as both creators and consumers is evident for all. As creators of knowledge, higher education makes a significant contribution to intangible assets such as knowledge, skills and innovation. These core elements of knowledge assets have given higher education a comparative advantage across all sectors around the globe economically (Carlucci et al., 2004).

Higher education also consume knowledge through recruitment of highly skilled work forces. These individuals join firms such as communication, computing, financial, business

and health services to help develop and research new technological innovations (Williams et al., 2008). However, cost and effective performance has rarely been deliberated to know the real value of knowledge assets in higher education. According to Secundo et al., (2016), higher education systems are transforming, daily to become more transparent, competitive and flexible. By facing these challenges, they need to actively manage and monitor the processes of creating their knowledge assets. And continuously acknowledge the value of intellectual capital in the society (Rowley, 2000).

The core competencies of knowledge assets thereby play a key strategic role and need to be measured (Carlucci et al., 2004).

Organisational Structure 			
	INITIAL	ENABLED	OPTIMISED
Vision	Focused on e-learning	Fully integrated in the vision	Shared by all stakeholders
Plan	Implementation of e-learning plan	Comprehensive e-learning plan	All staff are engaged in E-learning practices
Leadership	E-learning initiatives led by 50% of staff	E-Learning team led by 75% of staff	Plan fully implemented
Policy	Developed an E-learning policy	Developed & ratified E-learning policy	Accomodate innovate use of technologies
e-Learning Unit	E-learning Unit initiated	E-learning Unit fully functional	Training implemented & evaluated

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Taken from www.google.com Figure 9:

Knowledge Requirements for E-Learning:

Traditionally, learning required a classroom and a teacher. Also books, boards, timetables, and other materials to support the course on each subject (<http://www.prudens.com>)

However, with e-learning the following requirements as follows:

- Access to Original Content
- The Development of Content into Courses

- The Provision of Courseware
- The Ownership of Courseware
- Hosting Technology and Support
- Access to Students
- Learning Management
- The Branding and the Certification of Programs and Students

The components of the e-Learning are useful for firms and business models. Some organisations and institutions have strong competencies in a number of these areas (<http://www.prudens.com>)

Knowledge Sharing in E-Learning:

Knowledge sharing may sound simple, however, it is more complex than one can imagine. Below are some of the benefits listed for knowledge sharing and tips on how to facilitate the process (<https://elearningindustry.com>)

Benefits of Knowledge Sharing:

- Improves Productivity And Efficiency Everyone participates in the knowledge sharing experience.
- Increases Online Learner Participation Knowledge sharing gives online learners the ability to share ideas, ask questions, and address concerns.
- Optimizes Your eLearning Feedback System Since knowledge sharing is such a collaborative process, you gain direct access to peer-based feedback.
- Encourages Online Collaboration and Brainstorming Online learners are able to openly communicate with their peers, which allows them to brainstorm without limitations.

Ways to implement Knowledge Sharing In eLearning:

- Build A Centralized Online Resource Library
- Identify Knowledge Sources In Your Audience
- Create Online Learning Communities

- Host Webinars That Rely On Peer-Based Interaction
- Stress The Benefits Of Knowledge Sharing

Online learners may at first be reluctant to share their knowledge, as the market becomes more competitive. However, once they know the benefits involved generally they change their mind. By interacting and sharing can also enhance their own skills systematically leading to job promotion (<https://elearningindustry.com>)

Knowledge sharing requires online learner involvement. Therefore, learners must be ready willing and able to actively engage, teach, listen and learn in the process and share their experiences with others (<https://elearningindustry.com>)

Similarly, these core competent skills which have developed in terms of conventional delivery are just the same as a classroom. The learner must learn how to adapt to a virtual environment for the e-learning experience to be beneficial.

Key skills required for a positive learner:

- Positivity.
- Ability to build rapport.
- Generate enthusiasm and sustain interest.
- Helpfulness.
- Pro-activity.
- Knowing when to take action.
- Patience.
- Broader understanding of both learner's and group needs.
- Persistence and perseverance keeping learners on track.
- Deal with problems effectively.
- Knowing how to deal with any technical issues or know a person who can.

Recommendations:

E-learning is constantly evolving and with the world also advancing with new technologies and innovations; It is imperative the research into further development continues. The sustainable development goals set out by the UN states “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”

www.sustainabledevelopment.org. This is well and good and e-learning platforms have sprung up around the globe. However, with basic infrastructure not in place in several countries fair practice becomes an issue. It is essentially up to the government to have the basic foundations in place for each individual who wishes to learn have the opportunity.

Figure 10:



Taken from: www.sustainabledevelopment.org.

It is essential for institutes, companies and organisations to implement, sustain and maintain the knowledge management process. By constantly creating, transferring and sharing knowledge from one person to another. It involves and engages individuals to become better people. Not only does it teach you things you may not know, but essentially teaches you how to survive in this competitive market. Thus it is of fundamental importance that organisations do not try and manage the whole knowledge. But how it is collected, stored and shared is what is important (Carlucci et al., 2004). Organisations must continue to find ways of storage. However, not all database systems or software can be considered knowledge management systems (Robertson, 2002).

The key features of knowledge management which organisations must continue to adhere to and improve upon include:

- Managing to store all types of data, this can be in the form of documentation, video, voice, images and web-pages.
- Manage personalised access to data with security and privacy limitations in place.
- Modification of content so comments and feedback can be used.
- Search facility and user friendly interface.
- Wikis.
- E-Learning Technologies.
- Knowledge based systems.
- Community practice forums.

Whilst all these tools and techniques are implemented in organisations combining the e-learning software is important to provide and improve learning. Not all learners are the same, some have physical, non-physical and mental deficiencies. It must be established all countries and organisations look at ways of implementing knowledge management and e-learning to everyone. However, in appreciation to John Dewey who is regarded as the “father of progressive education”

His ideology has inspired education providers and researchers to develop these learning tools and techniques to ensure all human kind, including those with physical and learning disabilities access to learning and education (Ojugo, 2017).

It has been established from various sources, that whilst learning can be a process in life that is straight forward, different methods are used for individuals with learning and physical disabilities (Braidwood 1760; Jung 2007; Kuh 1995; Marschark et al 2001,2006). These researchers have found that there are a number of conditions associated with learning disabilities, and some physical disabilities can affect learning, for example, people with visual and hearing impairments. Organisations have collaborated with researchers to develop strategies to assist those with learning and physical disabilities.

The British Deaf Association (BDA) is a leading organisation for deaf people and run by deaf people. Their work includes campaigning for human/legal rights, and raising awareness of

British Sign Language (BSL). In 1760, Thomas Braidwood introduced sign language in his school, Braidwood's Academy, the first in Britain.

FIGURE 11: British Sign Language



Source: <https://www.signcommunity.org.uk/a-brief-history-of-british-sign-language-bsl.html>

Marschark et al (2001) looked for important factors from research-based practises in education, learning and development of students with a hearing disability. They identified the following four themes to be paramount:

- Parent advocacy and their involvement in their children's education.
- The need for diversity and flexibility, and learning styles, teaching styles and educational tools.
- The importance of teaching to children's strengths by building on what is known.
- The need to understand the whole child in order to match the best methods with children's characteristics.

This ideology/principle is reinforced by Jung (2007) who proposed that an Individual Education Programme (IEP) is necessary for children with special needs. IEP trains education providers to tailor the teacher methods to suit the particular learner, by considering the specific needs and goals of the learner.

Mencap, Mind, and more recently Heads Together, are leading charity organisations for learning disabilities and mental health. They have reported there are around 1.4 million people in the UK living with a learning/mental disability, 118,500 of these are children. These charities provide advice, information and guidance to families, carers and teachers, with daily support mechanisms to help assist those individuals with learning/mental disability. These mechanisms recognise the effects of physical disabilities on learning and mental health.

Incidentally, tools have been developed for individuals diagnosed with dyslexia to help aid their learning (Gabrieli, 2009). Samuel Osbourne reported in his article in the *Independent* that neuroscientists using MRI scans may have discovered a possible fundamental reason why some people are dyslexic (<http://www.independent.co.uk/news/people/dyslexia-richard-branson-potential-intelligence-genius-advantage-virgin-a7710676.html>). In this article, Sir Richard Branson (diagnosed with dyslexia), stated the condition should be recognised as a sign of potential and announced the launch of his charity, Made by Dyslexia (<https://www.virgin.com/richard-branson/launching-made-dyslexia>).

The Royal National Institute of Blind People (RNIB) is a leading charity founded in 1868. They specialise in assisting people with full and partial loss of sight, and adopted Braille in 1970 as the main learning tool for blind (<https://www.rnib.org.uk> first accessed on 19-04-17). Danner et al, (2000), investigated the learning style preferences of students with visual impairments in comparison with their sighted peers. They concluded the students with visual impairments mostly preferred practical, thinking or organised learning styles, whereas the sighted fellow students preferred extroverted learning styles. Preda's research study using Braille, found blind children manifest general learning difficulties, but specific reading difficulties. She compared sighted and visually impaired children aged 9-14, and concluded the lower outcomes for the visually impaired where due to their visual perception deficits (<http://icevi.org/publications/ICEVI-WC2002/papers/11-topic/11-preda.htm>

Disability matters is a free e-learning platform their mission statement is "Together we can challenge and positively change our own and others fears ideas and attitudes towards

disability and disabled people". This is a challenge for all mankind across the globe for truly promoting a global sustainable society www.disabilitymatters.org.uk accessed 27-07-18

ICT have developed ways to assist individuals with learning difficulties. The innovations are effective, simultaneously maintaining and upgrading this technology can further help develop mankind.

- Assistive Technology (AT) helps to assist teachers in their roles to communicate to students
- Speech Recognition Software (SRS) helps enhance reading and writing skills, as students can dictate their assignments, practice reading aloud and practice oral pronunciation skills.
- 123 Speak- this software "enables non-verbal people to communicate".

These advances in technology are just a few mentioned, however, the emphasis on these various ways of communicating are vital for today and tomorrow's world.

Conclusion:

Knowledge is generally acknowledged as essential for our daily routine. However, how the knowledge is managed is critical to surviving in this fast evolving competitive world.

Tools and techniques have been developed for the benefit of all human beings, however, some knowledge must be kept tacit (sacred) as if in the wrong hands can be detrimental to the individual or organisation. Furthermore, advances in mankind and technology help assist in eradicating these problems; Such as intellectual property rights and firewalls. Generally, the world is becoming more sustainable and what and who you know, is a known known. However, how and what you know needs to be preserved, stored and shared fundamentally for survival.

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