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Panel E29: Local knowledge and its (non-)integration in 'formal' education institutions

A Glocal Curricula

Integrating Global and Local Knowledge Systems in Higher Education

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Introduction

The well-being of the planet and conceivably human survival, depends on humanity's ability to adapt and resolve the interconnected social, economic, and environmental threats. To sustain life on earth, the significance of global partnerships in education and research is universally acknowledged in the 2030 Agenda Sustainable Development Goals (SDGs). UNESCO asserts that without more and better education, less economically developed countries will not benefit from global knowledge, but they simultaneously warn against eroding cultural diversity and neglecting indigenous knowledge. "The information revolution reinforces the supremacy of technological and scientific knowledge over other kinds of knowledge such as know-how, indigenous knowledge, local knowledge, oral traditions, daily knowledge and so on[1]."

Since independence Africa has strived to be liberated from its colonially enforced education systems. During the Accra University College opening in 1956, Kwame Nkhrumah stated that "We must in the development of our universities bear in mind that once it has been planted in the African soil it must take root amidst African traditions and cultures[2]." Neglecting this call has led to mounting tension between proponents of internationalisation and decolonisation discourses, and limits global collaboration in the co-creation of much needed knowledge to adapt. During the 2015 Higher Education Summit in Dakar, the former OAU chairperson Nkosazana Dlamini-Zuma reaffirmed that "Africa needs to develop its own knowledge - only then can we be completely free[3]." The critical question in context of a globalised world is how can the inherited Western tree of knowledge become rooted in African soil?

Recognising that Africanisation does not necessarily entail a total rejection of alternative sources of information, Odora Hoppers states that the challenge is "to build on local knowledge that exists in its people as a concomitant to working with global knowledge and information[4]." This blend of global and local pools of knowledge is best expressed with the term *glocal*[5] knowledge. To take a coherent stance in this inquiry it is firstly necessary to examine the notion of knowledge. A typical dictionary definition is facts, information and skills acquired through experience or education. Yet- although a matter of ongoing deliberation, epistemologically a finer distinction is made between:

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[1] UNESCO. 2005. *Towards Knowledge Societies.* p. 148. UNESCO Publishing. Retrieved 02-10-2020

[2]Cited in Address by Deputy President Cyril Ramaphosa during his installation as Chancellor of the University of Mpumalanga. Retrieved 02-10-2020

[3] Nkosazana Dlamini-Zuma. 2015. Keynote address at the African Higher Education Summit. Retrieved 02-10-2020

[4] Odora Hoppers, C. 2017. Transformation and Change in Knowledge Generation Paradigms in the African and Global Contexts: Implications for Education Research in the 21st Century. *Educational Research for Social Change,* 6(1), pp. 1-11. Retrieved 02-10-2020

[5] A concept modelled on the Japanese *dochakuka*, system of adapting farming technique to local conditions. (cf. Robertson, R. 1995. Glocalization: Time-space and Homogeneity- heterogeneity, in: Featherstone, M. et al (ed) *Global Modernities,* London: Sage. pp. 25-44)

- Knowledge by acquaintance (knowing about) that implies personal inferred thoughts based on sensory perceptions and justified interpretations.
- Procedural and tacit knowledge (knowing how) is associated with skills that require experience as well as personal abilities and understanding, which are often difficult to articulate.
- Propositional or descriptive knowledge (knowing that) which defines information and understanding that is explicit codified documented and learnt facts.

Further reflection uncovers that knowledge comprises an even more complex human practice. The construction and circulation of epistemologies is socio-culturally determined and infused with personal and societal ontologies - that is worldviews, ethics, moral values, and paradigms. According to Julius Nyerere the ultimate purpose of education is "to transmit from one generation to the next the accumulated wisdom and knowledge of the society[6]." Intrinsically bound to the social structure of a community, the knowledge expressed through education systems therefore relates to a society in time and space, and manifests in its religious convictions, political organisations, economic instruments, and customary way of life. Truly glocalising epistemic truths and ontological worldviews, places a mammoth task on the shoulder of educators.

As the African proverb goes; 'the best way to eat an elephant is to cut it up into little pieces', and therefore this paper starts out with a bite-size overview of South African educators' perceptions and efforts to integrate global and local knowledge paradigms in their curriculum. After framing the knowledge discourse in a historical context, the discussion concludes with a philosophical contemplation on what needs to happen for higher institutions to simultaneously reflect the societies and the world it serves.

The South African Knowledge Systems Reality

After the demise of apartheid, the first democratically elected government inherited an education system that divided the country according to race, manipulated identity formation and undermined the natural progress of knowledge production of all South Africans. In higher education much has been done since 1994 to transform institutional policies, spaces, cultures and racial representation, but localisation of the syllabi, curricula and didactics is much more challenging. Ongoing student protest movements demanding the dismantling of Eurocentric hegemony are a clear symptom that the existing academic structures and content still does not reflect the lived experiences of African students.

There are many misguided views on the goal of decolonising learning content. Sayed, Motala & Hoffman clarify that "the call to decolonise the curriculum can be understood as a challenge to give expression to an imaginary beyond existing thought and institutions that have become normalised as unchanging and unchangeable."[7] The challenge is to concretise this imaginary expression in practice.

Qualitative insights collected through in-depth conversations during a study conducted in 2019[8], revealed that South African academics perceive the following barriers to including local knowledge in their curricula:

1) Local knowledge is not based on verifiable facts and lacks scientific rigour.
2) Undocumented knowledge is disappearing as younger generations become absorbed in modernity.

[6] Extracts from J. K. Nyerere Education for Self- Reliance. Dar-es-Salaam, 1967. In Minogue, M & Mollo, J. (eds.) 1974. *African Aims and Attitudes: Selected Documents*. Government Printer,. London: Cambridge University Press. pp. 78 – 86

[7] Sayed Y, Motala S & Hoffman N. 2017. *Decolonising initial teacher education in South African universities: More than an event.* P. 61. Journal of Education, 2017 Issue 68. Retrieved 26-11-2018

[8] Ditmars van Niekerk, M.D. 2019. *Fusing Knowledge Systems in Higher* Education (Master's thesis). Available from Leiden University Student Repository

3) Indigenous knowledge is seen as inferior, outdated and irrelevant in present times.

4) Students are only interested in learning which will prepare them to partake in a globalised world.

5) The holistic nature of indigenous knowledge cannot be categorised in Western academic disciplines.

6) As academics they have little understanding of integrating scientific knowledge with African ontologies.

All study participants however acknowledged that culturally specific learning environments and content is pedagogically sound. Recognising that knowledge should build upon foundational understanding and experiences, they are experimenting with strategies that could contribute to contextualising and decolonising the education they offer, such as:

- Participatory Action Research (PAR) actively involving community members or organisations in collecting information that combines theory and practice.
- Service-learning that requires of students to share their academic knowledge through community service, and document the knowledge they have gained in the field.
- Online Communities of Practice (CoP) who collectively share and critically explore the contribution of indigenous, local, and global knowledge systems.

Although these strategies are an impetus to integrate knowledge systems, history attests that indigenising knowledge is a timeous and complex process. It cannot be separated from existing social constructs such as geo-political and economic powers, spiritual perceptions and values, etc. Inspired by Foucault's archaeology of knowledge[9], a synthesis of the human race's quest for knowledge that distinguishes humanity from all other living beings, serves to illustrate the layers of global knowledge accumulation and configuration that created higher education institutions in modernity.

The Evolution of Human Knowledge

Homo sapience evolved in Africa 2 – 3 million years ago during the Pleistocene geological epoch - the so-called last 'Ice Age'. Corresponding with the archaeological Palaeolithic (Old Stone Age) and Mesolithic (Middle Stone Age) periods, early humans lived in small egalitarian nomadic hunter-gatherers societies. As they became more apt stone-tool craftsmen, gained control of fire, and developed spoken language, the size of their groups and territory increasingly expanded. In search of food and land, archaic and pre-historic humans migrated out of Africa, gradually populating the whole globe. At this point Homo sapience shared a similar socio- cultural and technological knowledge base.

Marked by continuing climatic changes, the Holocene interglacial epoch started circa (c.) 10,000 years before the current era (BCE). The gradual warming of the earth, rising sea levels, drying up of fertile savannahs, migration and extinction of many animal species, sparked a transition to the Neolithic (New Stone Age) period. Human knowledge to cultivate land and ability to domesticate animals, led to the establishment of permanent settlements and the emergence of animistic[10] beliefs harmonising life and death, nature and the supernatural. Sufficient and surplus food supplies freed time for inventions and innovations such as the wheel, pottery, and copper melting skills. This led to specialised occupations including farmers, artisans, traders, healers, and teachers.

The transition to the Bronze Age c. 3300 BCE gave rise to the great Mesopotamian, Sumerian, Egyptian, Indus Valley, and Nuer civilisations in the Fertile Crescent[11]. This area is known as 'the cradle of civilisation' as the foundations of mathematics, science, technology, astronomy, medical practices, law, writing and the

[9] Foucault, M. 2002 [1966]. *The Order of Things: An Archaeology of the Human Sciences*. London &. New York: Routledge. Online Access

[10] A term coined by the anthropologist EB Tylor (1832–1917), animism refers to beliefs that all material phenomena have agency, without distinction between the spiritual and the material world

[11] A term conceived by the Egyptologist James Henry Breasted in his 1912 work *Ancient Times: A History of the Early World.* Ginn and Company

arts stem from here. It is also cited as the 'birthplace of religion' as archaeological artefacts indicate that people's understanding of life, society and the universe was intertwined with their beliefs in mythological anthropomorphic deities and rituals to appease the gods. Sophisticated Bronze Age economies interacted with each other through warfare, migration and trade, facilitating the spread of knowledge as "…merchants would carry innovations in various branches of knowledge along with their goods[12]." The Bronze Age concluded c. 1500 BCE when humans began to craft tools and weapons from a superior metal – iron. Excavations place regions in the western and eastern Africa as the oldest centres of iron innovation, but it should be noted that

> the beginning of iron metallurgy cannot be considered as the fruit of invention by a single genius whose know-how spread to the rest of the world. The emergence of objects made of iron must be viewed as the result of complex situations where independent centres of innovation could be very close to or even interrelate with centres which adopted the technique from somewhere else[13].

Dating back to 700 – 630 BCE the oldest known repositories of knowledge - primarily associated with the conservation of traditions, is found in Ancient Mesopotamia[14]. Knowledge was not documented or didactically transferred, but consisted out of skills and know-how based on empirical understandings steeped in animistic and polytheistic ontologies, and shared orally in socio-culturally determined ways. Spanning from 550 – 330 BCE, the Persian Empire - a series of dynasties centred in modern-day Iran, united the Fertile Crescent civilisations to what is considered the world's first superpower. Tolerant of the religious and cultural practices of conquered societies, the Persians infused the encompassed knowledge pool with Zoroastrian religious wisdoms and ethical philosophies[15]. It is during this era that the first archaeological evidence is found of a formal education system that aimed to raise skilled and moral members of society.

The Classical Greek civilisation (480-323 BCE) laid the foundation of a participatory democratic[16] form of government. The Greeks further fulfilled a significant role in collecting, organising, and distributing human knowledge. Building on the knowledge of Ancient Mesopotamia, they developed a sophisticated philosophical culture based on reason, logic and religious interpretations of the world. Their impartial, rational observation of the natural world established the basic principles of math and science. "For the Greeks, science [and maths] was indistinguishable from philosophy… and their thinking about this had theological dimensions[17]". Applying the dialogues of Plato, who turned the questioning style of Socrates into written form, Aristotle wrote about topics as varied as physics, biology, poetry, economics and politics. The Greek system of education culminated in the Platonic Academy and Aristotle's Lyceum in Athens.

At its peak Alexander the Great (356-323 BCE) conquered Persia, and ruled over a substantial part of Mediterranean Europe, Western Asia and Northern Africa. The legend goes that his admiration for the Persian cultures "…inspired [him] to combine all the works of the various nations he conquered, translate them into Greek, and collect them all under one roof[18]." He instructed the construction of a *Museion* where learning took place, and a *Biblion* where texts were archived in the Egyptian city that bore his name. Thereby Alexandria came to be regarded as the capital of multi-cultural knowledge and learning, and the Museion and its library is considered the first state institution of advanced learning akin to what we today

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[12] Mark, JJ. 2018. *Fertile Crescent. Ancient History Encyclopedia*. Retrieved 04-10-2020

[13] Huysecom, E., Descœudres, M. & Harrison, D. 2001. The Beginning of Iron Metallurgy: From Sporadic Inventions to Irreversible Generalizations. *Mediterranean Archaeology,* 2001, Vol. 14, p.2. Retrieved 06-10-2020

[14] Krebs,R.E. 2004. *Groundbreaking Scientific Experiments, Inventions, and Discoveries of the Ancient World. Middle Ages and the Renaissance*. Greenwood Publishing Group

[15] Behnamfar, Z., Maghsoodlou, A. & Nodehi, K. 2013. Principles of Education in Ancient Iran with a Look at Yashts. *Journal of Novel Applied Sciences*. JNAS -2013-2-S3/1085-1088. Retrieved 04-10-2020

[16] The term democracy comes from the Greek word that can be translated as people (demos) and rule (kratos)

[17] TimeMaps: *Atlas and Encylopedia of World History: Ancient Greek Civilization*. N/P. Retrieved 01-10-2020

[18] Philips, H. 2010. The Great Library of Alexandria?. *Library Philosophy and Practice* (e-journal). p.2. Retrieved 01-10-2020

classify as an university. The final stage of Greek rule known as the Hellenistic period lasted until Greece fell to the Romans, and is marked by a shift from theory to practice, and the creation of applied science[19].

Absorbing the Greek canon, the Roman Empire (27 BCE – 476 CE) achieved greatness through their military, political, and social institutional strengths. At its height, the Empire stretched from Mediterranean Europe to the Near East, northern Africa and north-western Europe. Distinguished for their engineering skills, dialectical thinking and disciplines related to public life - notably grammar, rhetoric, law, and history, intellectual life was centred in Rome and education was reserved for the elite.

During their rule Christianity (c. 1 CE) and Islam (c. 7 CE) branched out of Judaism - a small patriarchal monotheistic tradition in the Samarian (Israel) and Judaic societies. To follow how the intellectual manifestations of our communal forefathers, and the Greco-Roman education system unfolded in higher education, it is necessary to briefly consider how these two religions that became the most widely dispersed faiths, lead to a major turning point in the history of human knowledge.

Common Era Ontologies and Epistemologies

Followers of both religions spread throughout the Roman states, and continued expanding their influence for centuries. Christianity predominantly extended towards northern Europe and East Africa, and Islam towards the Middle and Far East as well as the Maghreb in North Africa.

After the decline of the Roman Empire, the European Early Middle Ages (476 CE – 800 CE)– commonly referred to as the 'Western Dark Ages' is branded as a time of ignorance, wars, famine, plagues and pandemics. European Christians rejected the literary knowledge of the Classical world, and intellectual life withdrew to the cloisters of Christian monastic[20] institutions.

Concurrently the Islamic Golden Age was a period of cultural, economic and scientific growth, during which madrasahs[21] served as the pillar of Islamic tradition. The House of Wisdom (*Bayt al-Hikmah*) with its public academy and libraries in Baghdad dates back to the 8th century. Scholars of all races and religions from all over the world gathered here for dialogue and study, fuelling major advances in the fields of medicine, engineering and agriculture, and the expansion of new disciplines, such as algebra, trigonometry and chemistry[22]. The University of Al Karaouine (*al-Qarawiyyin)* established 859 CE in Fes, Morocco, and the Al-Azhar University (*Jāmiʿat al-Azhar*) founded in 970 CE in Cairo, Egypt are deemed the world's oldest existing institutions of higher education. Papermaking, which originated in China[23] replaced the use of papyrus and parchment, radically transforming the mode through which knowledge was documented and transmitted[24]. The Translation Movement collected and translated ancient Persian, Greek and Roman documents, and

[19]Bilhete, A. 2015. Scientific Advancements in the Hellenistic Period: Divergence from Philosophy, Royal Patronage, and the Emergence of Applied Science. In HIRUNDO The McGill Journal of Classical Studies Vol 13 pp. 6-13. Retrieved 04-10-2020

[20] Ancient Mesopotamian custom of withdrawal, solitude and renouncement of worldly activities in search of deeper knowledge and understanding adopted 3 CE in Egypt by early Christians

[21] A term derived from Arabic, literally meaning 'a place to study'. In mediaeval times these educational theological seminaries offered elementary and higher learning for secular or religious scholars

[22] Berkey, J.P. 2003. *The Formation of Islam: Religion and Society in the Near East, 600-1800*. New York: Cambridge University Press. Internet Archive. Retrieved 10-10-2020

[23] Although it is not explored further in this paper, the contribution of Chinees science, technology, mathematics, and astronomy to the global knowledge pool, goes far beyond the commonly acknowledged four great inventions of ancient China, namely the compass, gunpowder, paper making, and block printing. (cf. Joseph Needham's multivolume 'Science and Civilisation in China' for a comprehensive study of Chinese scientific development).

[24] Bloom, J.M. 2001. *Paper Before Print: The History and Impact of Paper in the Islamic World*. Yale University Press. Online Access ACLS Humanities E-Book

Arabic became the lingua franca in scientific literature of the time. Their work is considered as the "…bridge that disseminated knowledge of the ancient civilisations including the Islamic one to the west[25]."

Enabling higher crop yields, the Medieval Warm Period (800-1400 CE) lead to a dramatic population increase and accelerated growth in Europe. A new political order with feudal states extending to rural economies through a manorial system stimulated urbanisation and learning became essential to fulfil the demand for literate clergy. Education was the prerogative of the Church, and in an attempt to reconcile 'lost' Greek philosophy, Roman technology and Arabic scientific knowledge with Christian theology, scholastic[26] monks recorded and translated existing Arabic texts to Latin.

Monastic schools offered religion- centred elementary education and advanced learning for the sons of nobility and the wealthy in *studium*[27] *particularia*. Although still dominated by religion, the emergence of *studium generale* institutions teaching the seven liberal arts[28] attracted a wide range of masters (*magister*) and students from beyond the local imperium. Foreigners without rights or legal standing formed *universitates* [29], and actively pursued 'academic freedom' through charters granting a degree of autonomy from the authority of secular and spiritual rulers. A common characteristic of these institutions of which the Italian University of Bologna founded in 1088 is the oldest remaining one, is that the Aristotelian logic and dialectical method of debate was the foundation of academic scholarship.

Spreading from the East along active trade routes, a plague called 'Black Death' ravaged Europe between 1347 and 1353, killing nearly half of the population. The pandemic radically disrupted society and sparked the emergence of the Renaissance 'rebirth' period. With a renewed interest in classic antiquity, liberated scholars rejected blind acceptance of religious interpretations of the world, and challenged the authority of state and church. Starting in the wealthy city of Florence, Italy and gradually extending to other parts of western Europe, this period marks the transition from the Middle Ages to modernity.

The Renaissance brought about significant political and social change, most notably the fall of feudalism, the rise of a capitalist market economy, and an intellectual movement that pursued knowledge based on critical thinking and rational evidence. Explorations opened global trade routes advancing geographical knowledge and introducing a new world of flora, fauna and human cultures, which were systematically incorporated into the European canon of knowledge. The invention of the printing press enabled the intellectual and cultural revival to spread across Europe and subsequently globally, as literate scientists, artists, philosophers and writers massively disseminated information and their new ideas.

An anthropocentric worldview emphasising human dominance over nature and the value of individuals, - an ontology later termed humanism, gradually became the dominant perspective in Europe. Humanism laid the foundation of the Age of Enlightenment also known as the Age of Reason in the 16th – 17th centuries. Promoting knowledge based on deductive reasoning and empirical inquiry, the movement initiated a Scientific Revolution distinguished by systematic experimentation to test academic hypotheses. This in turn

[25] AbdulAziz Algeriani, A.M. & Mohadi, M. 2019. The House of Wisdom (Bayt al-Hikmah), an Educational Institution during the Time of the Abbasid Dynasty. A Historical Perspective. *Pertanika Journal of Social Science and Humanities* 27(2) p. 1311. Retrieved 10-10-2020

[26] Derived from the Latin word *scholasticus* literally meaning devoting (leisure) time to studies and teaching

[27] Stadium denotes a school that is qualified to provide advanced education with masters in one or several academic disciplines

[28] The seven liberal arts: grammar, rhetoric, arithmetic, astronomy, geometry, and music was a continuation of Ancient Greek methods of enquiry employed during the Roman Empire.(cf. Willmann, O. 1907. The Seven Liberal Arts. In *The Catholic Encyclopedia*. New York: Robert Appleton Company. Retrieved 07-10-2020

[29] A Latin word meaning 'an union of all parts, the total or whole'. *Universitas magistrorum et scholarium,* - the word used for institutions of higher learning roughly means 'community of teachers and scholars' (cf. Kreckel, R. 2018. *On Academic Freedom and Elite Education in Historical Perspective*. Der Hallesche Graureiher 2018– 1. Forschungsberichte des Instituts für Soziologie. Martin-Luther-Universität Halle- Wittenberg. Retrieved 01-10-2020

paved the way for the first Industrial Revolution around 1750 with its technological inventions through which power-driven machines replaced hand tools. In search of more sources of energy and raw materials, industrialised Western nations used their advanced knowledge to colonise most of the world[30], spreading European forms of political governance, religion and culture. Transplanting the European model of education, universities infused with the philosophy of humanism, a scientifically rationalised mode of inquiry, and the strive for academic freedom gradually replaced all forms of advanced education as the prominent model for higher-learning.

21st Century Knowledge and Learning Skills

Culminating in the highly industrialised Digital Age, the collective structures, integrated systems and complex human activities of modernity have become a globalised phenomenon. The rapid shift to a global economy based upon Information and Communication Technology (ICT), initiated a new epoch referred to as the Anthropocene[31]. It is characterised as a time in which human-beings have exceeded the carrying capacity of the earth and their activities have an irreversible effect on the planet. Hazards such as climate change, loss of biodiversity, land-, air- and water degradation, stresses on food-production, urbanisation, etc. threatens the survival of humanity[32] and the existing plant and animal kingdom at large.

Rooted in these issues and concerns, humanity has reached a turning point that requires decisive action. It is evident that the emergence of knowledge societies offers a lifeline, and the contribution of higher education to achieve this is acknowledged in SDG target 4.3: *By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university*[33]. Although internationalisation of higher education is considered an essential vehicle to advance and share knowledge, a disturbing factor is that it endorses the hegemony of the Western techno-scientific education model and disregards local knowledge systems. This dichotomy has implications for the mondial knowledge sector and intersects with numerous national agendas.

Fundamentally transforming the power relations of knowledge production, requires that academics do more than only showcase checks and balances of 'diverse and inclusive' institutions. They have to become critically conscious of the knowledge they transfer and the didactics they employ. Paulo Freire (1921–1997) asserted that "[People] who think holistically and critically about their conditions reflect the highest development of thought and action[34]." Freirean critical pedagogy urges educators to stimulate students' empirical thinking abilities, explore the connection between academic disciplines and link newly acquired knowledge with their lived experience. Shor[35] lists ten values of critical pedagogy, namely:

1) *Participation*: the learning process is interactive and co-operative;
2) *Situated*: the learning material relates to the students' thoughts, language and living conditions;
3) *Critical*: students critically reflect on their own knowledge and the subject matter's relation to society;
4) *Democratic*: students evaluate and co-develop the curriculum;

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[30] By 1914 Europeans nations controlled 84 % of the earth's land surface.(cf. Said, E.W. 1986. Intellectuals in the Post-Colonial World. *Salmagundi* (70/71),pp. 44-64. Retrieved 07-10-2020

[31] The term Anthropocene from the Greek word for human (*anthropos*) and new or recent (*cene*) was popularised in 2000 by Paul Crutzen to denote modern-day human influence on the Earth.

[32] The novel coronavirus (COVID-19)- a zoonotic disease transmitted from animals to humans is an example of the interconnectedness and pressure people exert on the planet. It first appeared in Wuhan, China in December 2019 and was declared a global health emergency by WHO in January 2020. One year later the approximate death toll is close to two million people

[33] UN General Assembly. 2015. *Transforming our world : the 2030 Agenda for Sustainable Development*. A/RES/70/1. Retrieved 09-12-2020

[34] Shor, I. 1993. Education is Politics: Paulo Freire's Critical Pedagogy. In Peter McLaren & Peter Leonard (eds) *Paulo Freire A critical encounter* pp. 24 – 35. London &. New York: Routledge. Online Access

[35] Ibid p 32

5) *Dialogic*: students assert ownership of their education through dialogue;

6) *De-socialisation*: students examine regressive societal values such as racism, sexism, homophobia, etc.;

7) *Multicultural*: students explore knowledge systems of dominant and non-dominant groups;

8) *Research-oriented*: based on daily experiences, society, and academic material;

9) *Activist*: students explore societal problems through co-operative and participatory strategies, and

10) *Affective*: a critical, democratic classroom interested in the development of social inquiry.

The Internet, social media and Web 2.0 tools are effecting considerable changes in education, shifting learners from being recipients of information to being members of participatory and collaborative life-long learning communities. Acknowledging that technology is a powerful tool to transforming learning systems, Binkley, et al36 provided a framework for 21st century educators to address the need for social and creative interaction of learners from diverse backgrounds, whilst maintaining national and cultural values in an increasingly international and global environment. Apart from developing literacy and life skills, 21st century learning skills– Communication, Collaboration, Critical Thinking and Creativity (the four C's), empower students to fulfil an active role, share their perspectives and increase interaction among relevant communities.

Current learning models such as constructivism[37] and connectivism that builds on networks and communities of practice "that are current and flexible enough to be applied to existing and emergent problems[38]", embrace this trend.

Conclusion

A telescopic view of the layers of knowledge accumulation confirms that the global pool of knowledge is collective and universal. It has been developed and distributed throughout the world over centuries, as civilisations, empires, kingdoms and societies have risen and fallen in a never-ending cycle. Whether through quests to conquer and colonise, trade missions, migration streams prompted by climatic changes, to spread religious ideologies, overcome economic challenges or to acquire resources and wealth, learning and exchanging knowledge Is a human phenomena.

Placing the expansion of knowledge epistemes in a historical contexts, reveals the following dynamics that could ease the barriers identified by the South African academics, to glocalise and decolonised a curricula:

- Virtually every aspect of human knowledge stems from the Fertile Crescent, which since the dawn of man have included significant contributions from African civilisations.
- Climatic conditions and changes increases options, prompts adaptation, and stimulates migration streams that advance the spread of local ontologies and epistemologies.
- As systems became more complex, the transfer of knowledge were placed in the hands of qualified members, who assumed responsibility for the moral development and social integration of their pupils.
- All human societies are knowledge societies in their own right, and their knowledge expands in an accumulative progressive process that revises, adds to, and builds upon existing ideas and theories.

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[36] Binkley, M., Erstad, O., Herman, J., Raizen, S., Ripley, M. & Rumble, M. 2010. *Defining 21st Century Skills. Draft White Paper*. Part of a Report to the Learning and Technology World Forum 2010, London. Retrieved 07-10-2020

[37] Constructivist claim that learners interpret information and personalise knowledge according to their own reality, through observation, experience and interpretation. (cf. Cooper, PA. 1993. Paradigm shifts in designing instruction: From behaviorism to cognitivism to constructivism. *Educational Technology*, 33(5), 12–19.

[38] Anderson, T., & Dron, J. 2012. Learning Technology through Three Generations of Technology Enhanced Distance Education Pedagogy. European Journal of Open, Distance, and E-Learning. p8 Retrieved 07-05-2020

- Since ancient times there has been affinities and mondial cross-fertilisations between academic and scientific knowledge seekers.
- From its outset, higher education institution have gathered the best scholars of the world and served as repositories of accumulated knowledge.
- It is impossible to distantiate knowledge epistemes from the natural environment, or dictating economical situations and political agendas.
- All forms of knowledge is embedded in ontological worldviews and inseparable from the socio-cultural environment in which it is housed.

Whilst humanism can be considered the presiding ontology in internationally recognised knowledge systems, there is a danger in that it has emptied nature of its spiritual significance. Rational thinking and deductive reasoning alone will not provide humanity as a whole with sufficient tools to change course. The inter-relatedness of complex systemic challenges we are facing can no longer be compartmentalised in separate natural and social sciences and humanities disciplines. Alternative local knowledges with holistic approaches to must be employed to address these pressing societal and environmental issues.

To conclude In the words of Foucault: "Every educational system is a political means of maintaining or of modifying the appropriation of discourse, with the knowledge and the powers it carries with it[39]." Emerging from the Dark Age of colonisation, the people of Africa are committed to regain their sovereignty and dignity. Thabo Mbeki – the second president of democratic South Africa, popularised the African Renaissance narrative to express a cultural, scientific, and economic rebirth required to dismantle European structures[40]." Contextualised within broader postcolonial trajectories the African Renaissance encapsulates a wide range of initiatives including dismantling intellectual imperialism. Epistemological decolonisation does not imply rejecting all knowledge, but giving African knowledge systems an equally valid place among knowledge systems in the world.

Man is resilient and has an innate ability to adapt and evolve their societal formations. Accommodation of different epistemes will create a level playing field in which collaborations are transformed into true partnerships that respect different worldviews and integrate scientific knowledge and technical skills with the wealth of other existing pools of knowledge.

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[39] Foucault, M. 1972. The Discourse on Language. In *The Archaeology of Knowledge and the Discourse on Language*. New York: Pantheon Books, pp. 215–237.

[40] Mbeki, T. 1997. Address by Executive Deputy President Thabo Mbeki, to Corporate Council on Africa's "Attracting Capital" Summit, April 19. South African Department of International Relations and Cooperation's (DIRCO). Retrieved 16-12-2020

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