THE PAN AFRICAN E-NETWORK PROJECT:
A New Learning Culture

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ABSTRACT

This paper sets out to explore the paradigm shift in learning culture brought about by the advent of online learning in the mostly print-based ODL system at the Mauritius College of the Air (MCA). It delves into the perceptions of learners and MCA staff involved in a range of undergraduate to Master's programmes forming part of the Pan African e- Network Project that wires 23 African countries with top-ranking Indian universities through synchronous and interactive state of the art technology. Learners across five of the disciplines offered through tele-learning and a team of MCA staff participating in programme delivery were surveyed through questionnaires and interviews to collect both quantitative and qualitative data. For most of the respondents this new learning ethos has induced an acculturation process requiring radical reconceptualisation of prior notions about teaching/learning. MCA staff, too, have had to learn conducive behavior patterns to consolidate existing support services. Survival in this new learning environment where the tutor is a remote on-screen entity, where e-books replace printed material, where connectivity can be a daily struggle, demands another mindset, another set of values enabling learning and fine-tuned ICT skills. Socialisation with tutors and fellow learners is possible through links in Facebook and Twitter. However, learners still tend to feel somewhat isolated. It is proposed that an e-platform be set up to link up learners as a mutually supportive learning community engaged in the construction of knowledge.

Keywords: New learning culture, tele-learning, values enabling learning

INTRODUCTION

The Pan African e-Network Project, an ambitious exemplum of South-South collaboration to empower human resources in Africa, has brought about a paradigm shift from supported print-based self-learning to self-directed online learning at the MCA. Questionnaire survey and interviews of learners and MCA staff reveal that a new teaching/learning culture has emerged, stretching further the horizons of flexibility of time and space and inducing virtual relations between learners and providers of learning.

This paper explores behavior patterns engendering a new ethos conducive to effective e-learning. Suggestions are made to alleviate the impersonality and isolation of the virtual mode.

Conceptual Clarification

'Tele-learning', in the context of the Pan African e-Network Project, can be referred to as a process technologically akin to video-conferencing, with live and interactive lectures transmitted from Indian universities to wired African centres (DigitalLearning, 2008). A broad interpretation of culture drawn from corporate and sociological perspectives is applied to the educational context of our research. The Cambridge Dictionary Online defines culture as 'way of life'. Brown (1995) refers to it as 'beliefs, principles and ways of behaving' of an organisation.

Culture, therefore, may be described as the beliefs, behaviours and values that form part of our teaching/learning system. The e-network experience is considered a 'new learning culture' as it has brought about changes in beliefs about teaching/learning and behaviour patterns. To fill in the gap between former practice and the present virtual mode, learners and providers have developed some dispositions, principles and behaviours which are conducive to enhancing learning. These have been termed 'values enabling learning'. Cultural metaphor runs across the paper to describe the paradigm shift from supported print-based ODL to online learning.

MAURITIUS COLLEGE OF THE AIR

MCA, a para-statal non-profit institution, was set up in 1971 to promote education through mass media and correspondence courses. The Division of Distance Education was set up in 1994. Diverse ODL programmes ranging from certificate to postgraduate level are offered in partnership with local and overseas institutions through mostly printed self-learning materials and face-to- face tutorials on Saturdays (Jheengut, 1998). A well-integrated backbone of learner support consisting of counselling and pastoral care via phone, email and face-to-face contact forms the strength of our system.

PAN AFRICAN E-NETWORK PROJECT

The brainchild of former Indian President, Shri Abdul Kalam, this innovative 125 million USD project is funded by the Indian Government to bridge the digital divide in Africa, making 'creative' use of 'ICT to catalyse socio-economic changes' (Chand, 2010). It aims at connecting 53 nations of the African Union with top ranking universities and hospitals in India through satellite and a fibre optic network to provide effective tele-education and tele-medicine. The project was launched in 2009 and currently connects some 45 Learning Centres and 40 Patient—End Hospitals in African Union member countries.

What drives the project is strong undersea cable network and satellite connectivity (C-Band with INTELSAT-904/RASCOM). Implemented by the state-run Telecommunications of India Limited (TCIL), the project uses cutting edge technology capable of being integrated with the latest broadband devices like Wi-Fi and WiMax.

Programmes are relayed from 12 Super Specialty Hospitals and 5 universities in India to the satellite hub station located in Senegal. From there services are distributed to tele-centres across Africa. The following figure depicts how the system functions

The e-Network Architecture

Regular tele-medicine consultations have already started in some of the African countries. The project also includes setting up a 'VVIP' network between offices of the heads of state or government across Africa. It has capacity to support e-governance, e-commerce, infotainment, resource mapping, meteorological and other services

The Pan African e-Network project won the international Hermes Prize 2010 for innovation for contribution in the field of sustainable development. The citation describes the e-network as 'the most ambitious programme of distance education and tele-medicine in Africa ever undertaken' (Chand, 2010). More than 2000 African students have already registered with Indian universities

VIRTUAL LEARNING

Live lectures are transmitted from Indian universities simultaneously to all tele-learning centres in Africa, thereby forming multiple virtual classes connected to one remote lecturer. Webcams and voice-over protocol software enable lecturers and learners to see and hear each other. Learners can also interact in real time with subject experts based in India. Those who do not attend 'class' can download recorded versions of live sessions anytime and anywhere at their convenience. Assignments are uploaded on the Pan African e-Network portal. All courses are examinable.

Pan African e-Network in Mauritius
The Sir Seewoosagar Ramgoolam National Hospital (SSRN) and the MCA are the privileged networked tele-centres in Mauritius. At the MCA, 134 learners have enrolled in the following programmes

  ➢ Master in Business Administration-International Business (Amity Univ.)
  ➢ Master in Finance and Control (Amity University)
  ➢ Bachelor of Finance and Investment Analysis (Amity University)
  ➢ Bachelor in Business Administration (University of Madras)
  ➢ Diploma in HIV and Family Education (IGNOU).

The MCA provides support services such as administrative co-ordination and counselling to these learners. The appeal of e-learning can be gauged from the significant increase in enrolment since inception in July 2010 as illustrated in the figure below

Enrolment in online courses
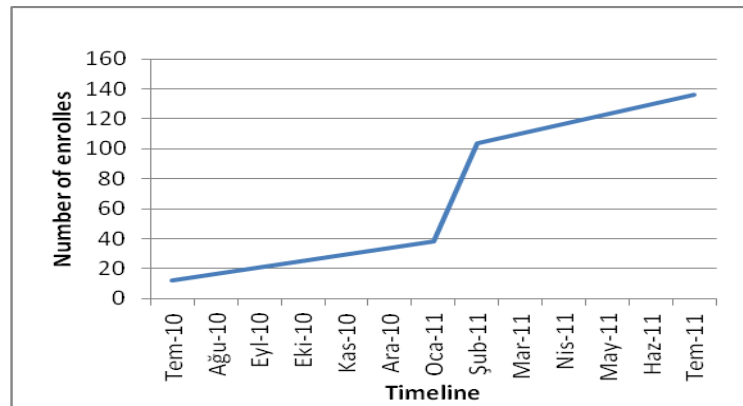
Learner and provider perceptions on this growing trend of teaching/learning were explored through a survey carried out in April 2011.

RESEARCH METHOD

Both quantitative and qualitative methods were used to explore the paradigm shift and its multifaceted dimensions in terms of teaching/learning culture. Data was collected from learners and staff through one questionnaire survey and several interviews. Learners were surveyed across all the 5 e-networked programmes ranging from Diploma to Master's level for representativeness of academic level and discipline.

Research Questions
The following questions guided our research;

> ➢ How far is the Pan African e-Network Project a new learning culture?
> ➢ Does this culture have limitations?
> ➢ How can these limitations be alleviated?

Questionnaire Survey
Designed with a mix of multiple choice, rating scale and open-ended questions, the paper questionnaire aimed at feeling the perceptual pulse of learners on:

> ➢ their appreciation of the online education paradigm,
> ➢ the impact of virtual learning on their beliefs and behaviours,
> ➢ difficulties faced, and
> ➢ suggestions for improvement.

47 learners (46% of the total population at that time) across 5 disciplines were attending tele-learning classes at the MCA when questionnaires were distributed. Filled in questionnaires were collected on the spot.

Learner/Staff Interviews
Data gathered through the questionnaire survey inspired us to probe deeper into how learners and staff were coping with the paradigm shift.

It was felt that the complexity of enculturation in a new teaching/learning framework required a holistic and multi-angled approach by prodding different groups involved in the process. This comprised;

- individual interview of 5 learners - one from each discipline on the basis of prompt availability
- group interview of 8 administrative staff of the MCA
- interview of MCA's Associate Professor
- teleconferenced interview of the Deputy Director of Amity University, provider of 3 of our e-network programmes
- group interview of 8 enterprising postgraduate learners who created a small community of learning through Skype.

We discovered this learner-initiated mutually supporting group during our fieldwork. It became imperative to include their experience and commendable adaptive strategy in our paper.

FINDINGS

Data analysis revealed recurring patterns of the emergence of a new learning culture. To avoid repetition, related learner and staff responses have been categorised thematically as;

- Rethinking beliefs
- New ways of teaching/learning
- Adaptive behaviours
- Values enhancing learning.

Rethinking beliefs

Embedded in all cultures are assumptions and beliefs which produce ways of doing things. This applies to our e-network culture too. 85% of questionnaire respondents referred to this paradigm shift as 'challenging' familiar ways of teaching/learning through 'newness' of approach and modern technology.

All the learners and MCA staff interviewed spoke of how the e-network experience has debunked their assumptions about:

- the 'fixedness' of teaching/learning in respect of location and time
- classroom, teaching and learning processes
- reading and learning materials
- institution-centric responsibility for learning.

An undergraduate learner told us "before I believed that learning cannot happen without a classroom and a teacher. Now I know it can". MCA staff marvelled at how lectures transmitted from India could be simultaneously followed by virtual classes found in tele-centres in 23 other countries in Africa.

One staff member who had participated in the induction of MBA learners conducted live from Amity University in India, described the possibility of "actually seeing in real time other learners in virtual classrooms in remote African countries" as "unbelievable".

One learner said she always assumed learning took place under the 'guidance' of a teacher. Now she believes in unguided self-learning. MCA staff too, spoke of the transfer of responsibility for learning from the MCA to learners. One administrative staff said "we are used to monitoring assignment submission etc. and spoon-feeding learners through reminders ... we wouldn't have imagined learners being so independent".

Reconceptualising former reading ethos to accept the new e-book format, however, has been problematic for many learners. MCA Associate Professor aptly terms this as "mindset" adjustment from "leafing through books to reading on screen". Adaptive behaviours will be discussed in more detail later.

NEW WAYS OF TEACHING/LEARNING

It is overwhelmingly apparent from responses from all quarters that the Pan African e-Network Project is a new learning culture with new ways of doing things. 83% of the questionnaire respondents stated this is their first exposure to e-learning as shown in the following chart;

Exposure to e-learning
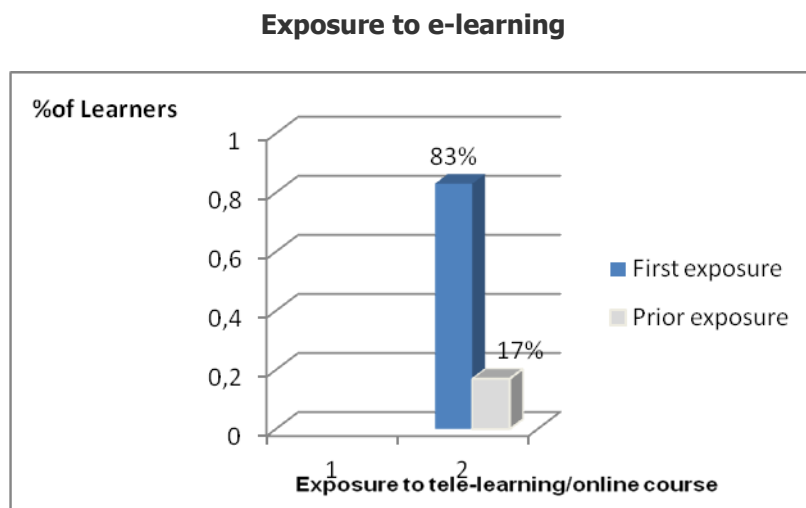
87% of questionnaire respondents were appreciative of the flexibility of this culture which enables learning anytime, anywhere. This 'boundless' way of learning frees learners from the constraints of attendance as recorded lectures can be downloaded from home or the workplace or abroad. In fact, attendance of live lectures is rather low in general. Learners spoke of the 'freedom' ethos – freedom to decide when, where and how to study.

In their interviews all learners referred to the following elements of newness in the way they were now learnin;

- ➢ **virtual class**
- ➢ **hypertext and e-books (in pdf format)**
- ➢ **uploading assignments**
- ➢ **impersonality of lecturers.**

Albeit exposed to hypertext reading before, learners underlined its frequency in this mode. Indeed from a linear reading culture they are now immersed in non-linear hyperlinked processing of information. Laurillard (1994) argues that hypertext, a 'complex network of simple links between information fragments' has another information decoding paradigm which impacts on cognition.

MCA staff discussed new work procedures such as online registration and impersonal dealings with 'faceless' learners. Academics involved in the provision of learner support talked about the challenge of providing support in a virtual mode.

The Deputy Director e-Learning Programmes of Amity University spoke of this mode as "a new generation of distance learning" capable of "reaching the unreached". This, he argued, has "re-invented the way to learn... with no voluminous books ... and downloadable syllabus". Commenting on the flexibility and inclusiveness of this system, he emphasised that it allows drop-outs to re-integrate later.

Adaptive Behaviours

Culture changes entail adjustment initiatives for survival. Similarly learners and staff have developed adaptive behaviours to cope with this new educational environment. Interviews revealed that most learners print e-books. They explained that e-books do not enable note-making, underlining and highlighting. Indeed, research (Laurillard. 1994) corroborates the assimilative and meaning making value of these strategies. Learners also stated that printed versions were more readily available for cross-referencing and revising as well as being more portable and less stressful for eyes.

One learner has been very innovative in integrating e-learning into her hectic daily life. This working mother of two converted archived lectures to MP3 format and installed a loudspeaker so that she could listen while doing household chores. She also 'studies' while driving.

A group of postgraduate learners have also been very enterprising by setting up a skype-networked support group for collaborative learning. They boost up each other's spirits, share notes, discuss assignments and share experiences as they come from different professions. They underlined the importance of 'emotional support' gained through such visual networking in the current virtual mode of isolated learning.

Learners related how they had to fine-tune their IT skills such as search, navigation, and conversion to other formats to adapt to this technology-driven environment. MCA staff, too, have had to refine their IT skills.

Emails replying to learner queries are being more painstakingly worded. Our Associate Professor described how he infuses warmth into his emails to compensate for the absence of physical contact. Russo and Benson (2005) stress the importance of textual 'immediacy' when interacting with 'invisible others'. They suggest personalising emails by using first names and personal examples as well as conveying 'affect' through 'grammatical and lexical measures'. Such verbal cues create personal connection in an impersonal online environment. E-interaction with learners as a measure of support provision engenders certain work habits such as longer hours of connectivity every day as testified by MCA staff.

As for Amity Deputy Director who receives emails from around the world, it is vital to be connected about 18 hours daily with learners and staff.

Values enhancing learning

Values are the guiding principles of behaviour which reflect what learners as well as providers deem important for effective learning. We consider them the empowering drivers of any learning culture. The e-network community is sustained by a value system which helps learners survive in the virtual world. Crucial among these is autonomous self-directed learning. 90% of questionnaire respondents recognised this as an asset for online learning. This enables them to take responsibility for their learning instead of depending on institutional monitoring of lecture attendance and assignment submission. One postgraduate learner aptly phrased this as 'self-management and self-discipline'.

49% of those surveyed through questionnaires admitted to facing technological problems. Perseverance and high tolerance of technological hurdles are vital weapons for struggling in the face of adversity such as no connectivity, downloading/uploading glitches and long hours of search/navigation. Endurance and grit make one survive in this virtual world of daily battles with technology.

Most learners related having experienced a period of teething difficulties. Other values such as problem-solving, innovation and initiative as exemplified in the adaptive behaviours mentioned above are also essential for effective learning.

Providers too are driven by work ethics which aim at enhancing learning. MCA staff discussed the importance of making our institutionally embedded principle of empathy cross the virtual divide. Our Associate Professor described this as "look at learners as individuals with specific needs" requiring "prompt response". Amity Deputy Director spoke of the emergence of a corporate culture driven by "dedicated attention" and taking "immediate corrective actions".

Limitations

User feedback compels attention to certain areas for improvement. Connectivity problems with regard to the delivery of live lectures and downloading of archived ones recurred in survey responses.

Many learners felt lectures are deficient in tangible interactivity. The 'skyping' group explained that although the possibility of asking questions is available during the live tele-learning lectures, in real terms there is little time left "after the lecture is over and connectivity problems for voice over have been resolved". Often, MCA learners have to wait for their peers in tele-centres across Africa to finish their questions and "by the time connection is established with Mauritius there is no sound!" Real smooth flowing interaction is therefore not always present.

Moreover, 51% of questionnaire respondents and all the learners we interviewed complained of lack of contact with the lecturer. They spoke of the 'impersonal' nature of the lectures, the psychological remoteness of the lecturer and therefore inability to develop a rapport with them. One learner said lectures have "no warmth …. no human touch…".

The absence of feedback on learner progress was highlighted by all learners.

Learners also expressed dissatisfaction with the static approach of lecture content transmission. They perceive the process as 'passive' and 'monotonous'. This echoes Folley's (2010) allusion to traditional lectures as "the transfer of notes from the lecturer to the notes of the learner without passing through the brains of each other". The lacuna in engagement with learning content must be remedied.

Many learners expressed feelings of isolation. Those in the skyping group talked about alienation from:

> - the lecturer and
> - other learners.

They longed for visual contact, camaraderie and discussions. This urged them to set up their own mutually supportive community to motivate each other and develop learning strategies and discuss academic issues. They spoke at length about the absence of peer relations and the lack of emotional support.

Russo and Benson (2005) underline the importance of learner to learner bonding to develop 'affect', an important agent in cognition and effective learning. The existence of this learner initiated group bears testimony to the need for providing a platform for peer networking as well as collaborative learning.

Interestingly, although many of the learners are aware of social networking links of provider institutions in Facebook and Twitter, very few interact with peers. Most do not know co-learners.

All those interviewed, however, said they would prefer institution mediated exchanges. This is in line with research (Gregor and Cuskelly, 1994) revealing that learners generally do not volunteer for e-interaction. They prefer participating in structured communities of learning.

The above limitations deviate from the elements of 'good practice' in distance education outlined by Coomey and Stephenson (2001), notably: dialogue, involvement and support. Suggestions will be made for remedial in the next section.

RECOMMENDATIONS

Connectivity is the lifeblood of this project. It is imperative that measures be taken by authorities concerned to ensure smooth delivery of lectures and better real time interaction between lecturers and learners during transmissions. Most learners, MCA staff as well as the Amity Deputy Director referred to the need to resolve connectivity problems to ease the learning process.

Tutor support is vital in distance education (Simpson, 2002). To improve the current tutor feedback structure we propose an idea that came from learners themselves viz. group skyping with lecturers on an agreed schedule to discuss queries.

As for the 'mono-mode' e-lectures, they can be made more interesting by using varied formats such as animation, video clips and blended teaching techniques.

Our next core suggestions are rooted in the social constructivist framework and aim at meeting the demand for collaborative work voiced by all the learners interviewed. Indeed, knowledge is built through exchange of views, negotiation of meaning and formulation of new schema. Gunawardena, Lowe and Anderson (1997) highlight the importance of co-learners working together for the 'social construction of knowledge'.

In online environments collaborative networking is doubly essential to compensate for relationships that would otherwise have developed in face-to-face educational setups. Stressing the value of active engagement in effective learning, Folley (2010) recommends strategies to make learners 'engage more interactively with lecture material, with the lecturer and with each other' this can be made possible by setting up collaborative learning structures.

Discussion is the oxygen of active virtual learning. Paulus (2007) considers 'constructive dialogue' as a crucial enabler of knowledge creation. She argues that 'reconciling conflicting views are key to dialogic meaning making'. She recommends platforms of computer mediated communication such as 'discussion forums for conceptual moves and the knowledge construction process'.

Once a collaborative structure is demarcated, tasks should be carefully designed for meaningful discussion. Terming these activities as 'e-tivities', Salmon (2002) argues that they are vital for active learning. She posits that they should be designed to 'scaffold' negotiation of meaning and should be motivating enough to ignite a 'spark' for active discussion. Stimulating topics of experiential, applied and individual type are recommended. Within this model of collaborative construction of learning, Salmon underlines the importance of 'e-moderators' i.e. content experts who facilitate and mediate discussions to promote learning. Such a presence, we feel, will fill in the void left by the absence of a guiding/feedback providing tutor in the Pan African e-Network Project.

It is proposed that discussion forums be set up course-wise on the MCA website. This can be done through low cost asynchronous networking of learners via listservers. Within this system each learner works out his/her response to a short but challenging e-tivity then emails it to the forum every week. S/he then comments on the submissions of other learners thereby engaging in constructive discussion. At the end of the week the e-moderator posts feedback to the listserver. Here is a schema showing this process:

Collaborative learning framework
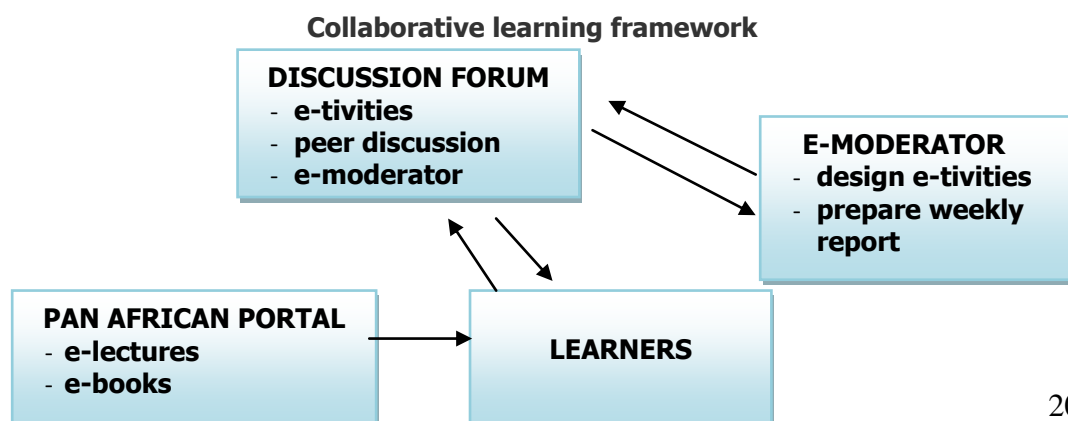
For this system to be truly constructive it is crucial to structure the discussion tightly through sequential reference to lectures and readings in e-tivity design.

Procedures for submission of

  ➢ one's response to e-tivities, and
  ➢ comments on the responses of other learners should be well defined in terms of time frame and format e.g. 200 words in length.

An 'E-Café' Link May Also Be Created For Light Talk
Following a pilot country specific phase, this framework could be applied at a regional level in all other tele-centres of the Pan African e-Network Project to enhance the learning process. Eventually a broader collaborative model could be developed to network all learners doing the same course around Africa. In the very short term, however, we propose that specialised blogs for each course be created on the Pan African e-Network website to provide social space for learners across Africa. Linkages between tele-centres could also be established for reflective thinking as well as sharing good practice. The wealth of cultural, academic and professional exchanges generated by these linkages would be truly 'panafrican' in substance.

CONCLUSION

Still in its infancy but mighty in its reach, the Pan Africa e-Network Project has promises to keep and a long way to go. To materialise the goals of South-South collaboration, it is imperative to research further into the impact of this new culture on learners across Africa. From geographically dispersed individual-centric learning, it is now time to move towards collective learning across Africa. The challenge of the next phase of the project is to build bridges between all African tele-centres to forge a synergy of learning experiences as 'knowledge shared is knowledge multiplied' (Kalam, 2011).

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Appendix I
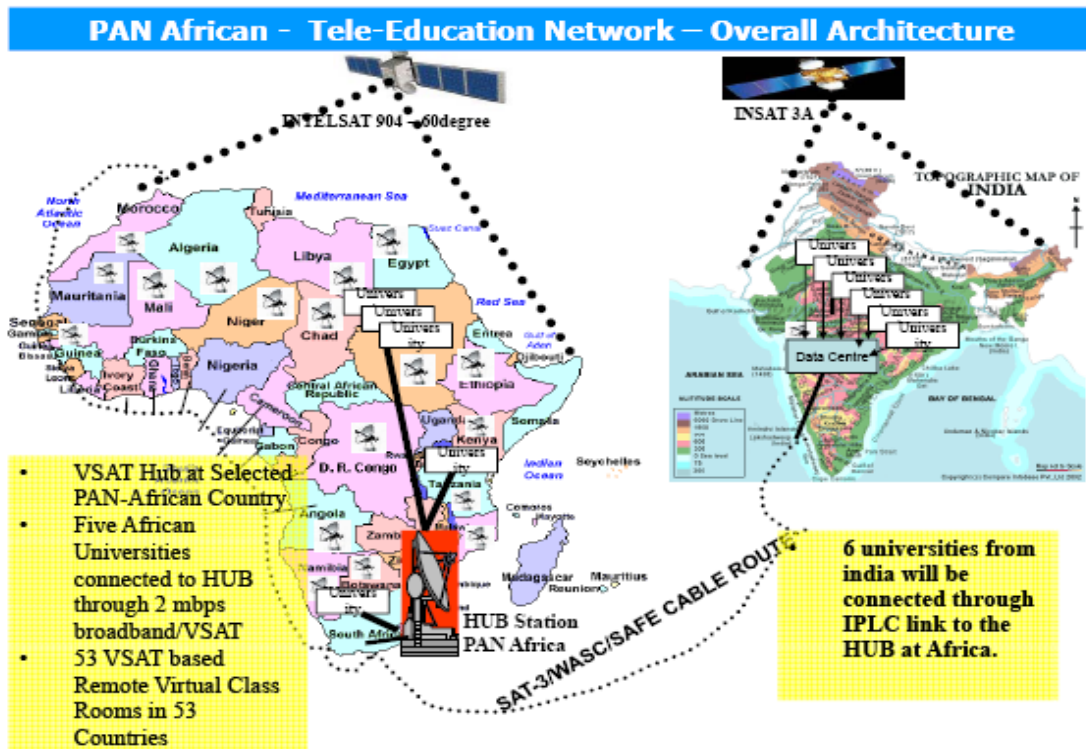
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Appendix II
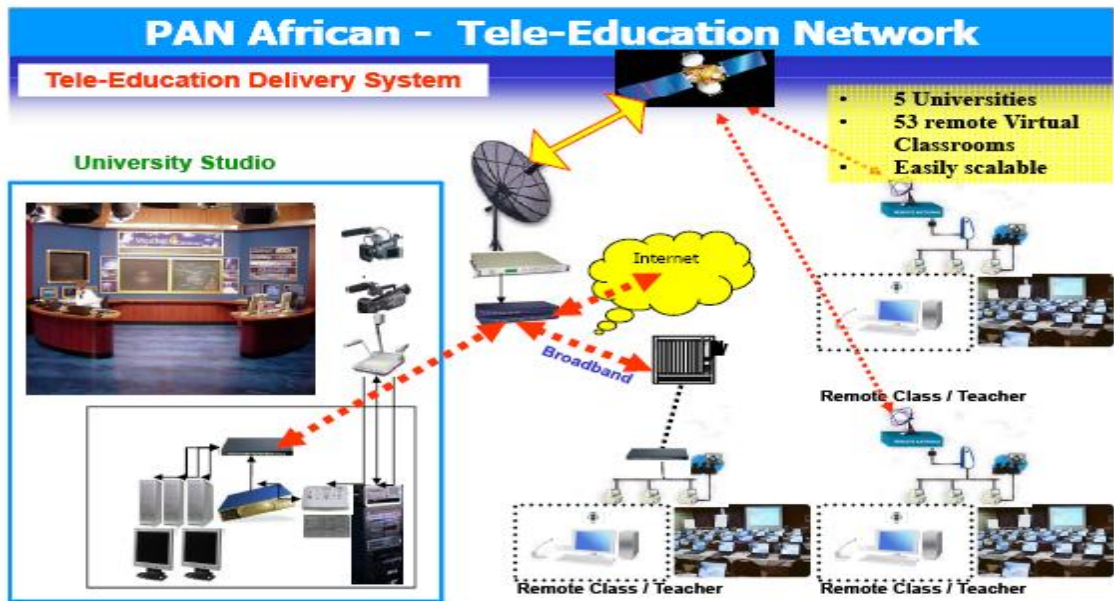
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210

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