

Kufundziswa kwetilwimi taseNingizimu Afrika ngekusebentisa bucwepheshe

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Tilwimi tase-Afrika betatiwa njengetilwimi letisemuva ngetinfo letiningi, lokunye kwato kungabi nemagama (terminology) kulomkhakha wetemfundvo tibuye futsi tingabikhona etindzaweni tedijithali. Inhloso yalolucwaningo kubuka kufundzisa kwetilwimi tase-Afrika ngebucwepheshe besimanje kanye nekubakhona kwato etindzaweni tedijithali. Umbuto longatibuta wona kutsi, Yini lekumele yentiwe kute tilwimi tetfu tase-Afrika tifundzise nato ngebucwepheshe besimanje? Singatisabalalisa njani etindzaweni tedijithali? Ngalemibuto lemibili kubalulekile kutsi bothishela bafundzise kusebentisa bucwepheshe besimanje ekufundziseni tilwimi taseAfrika. Leliphepha lihlose kuveta kutsi Tilwimi tase-Afrika tingafundziswa tisebentisa bucwepheshe besimanje kantsi futsi tibuye lisatjalaliswe etindzaweni tedijithali. Lokunye lelikubukile kutsi tilwimi tase-Afrika tingafundziswa ngekuhlanganisa letinye tifundvo letifana nabo-khodingi kanye nerobothiksi. Ngalamaye emavi tifundvo letikhicita bantfwana lebakwati kucabanga, kucatulula tinkinga nekutfola tisombululo letinemcondvo tingafundziswa etilwimini taseAfrika. Lolucwaningo lusebentise indlela yekucwaninga ye khwalithethivu lephindze isebentise indlela yekusampula lebuka injongo (purposive). Lolucwaningo lincike kakhulu ekubukisiseni lwendlela yeluhlolo lwedeksithophu(Desktop), luhlolo lwetincwadzi (document analysis). Lelucwaningo lubuke kusetjetiswa kwe-Actor Network Theory lokuyi mfundziso-njulalwati (theoretical framework) lokungilo lolukwati kusebentisana naleminyane imibhalo. Kuhlatiywa kwalokutfolakele (data analysis) lutawusebentisa Indlelanchubo yekwehlukana ngetingcikitsi. Kufaka ligalelo: Lolucwaningo lungaba lusito kubafundzisi, ikakhulukati etikhungweni temfundvo lephakeme ekufundziseni tilwimi tase-Afrika ngekusebentisa iteknoloji kanye netilwimi tase-Afrika uma selutfolakala, selukhulunye ngaphesheya kwetilwandle.

Emagamamcoka: bucwepheshe besimanje, tindzawo tedijithali, tilwimi tase-Afrika, inthanethi, tifundvo tedijith

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Teaching South African languages through technology

ABSTRACT

African languages are behind, especially with regards to terminology in the education space, and entering the digital environment. This research considers the teaching of South African languages through technology and its presence in the digital space. What can we do in this regard? First, it is important that we have to educate our teachers on how to use technology in teaching South African languages. The paper explores the potential in the use of technology and occupying the digital space available. It examines how South African languages can be integrated with other subjects like coding and robotics. In other words, teaching African languages through technology can produce learners who will be empowered with 21st-century skills and be able to use the information that will be digitally relevant. The study adopted Actor Network Theory (ANT) to direct its activities. This framework gives credit to any being or factor, irrespective of its nature, human, or non-human. ANT is a theory of the progressive constitution of a network in which both human and non-human actors assume identities. The data and information that were generated through participatory action research, a desktop review, a literature review and textual analysis were analysed using critical discourse analysis (CDA). This was used to show how discourse structures reproduce, legitimize, question, or perform power and dominance relations in society. Also, CDA is an analytical research approach that analyses speech critically. A person or group of dominant tendencies review critical discourse analysis trying to explain a social reality and have a specific goal in mind. Findings suggest that collaboration with all stakeholders in digitising and teaching through technology is possible. We also look at the contribution of the Web in promoting the use and status of African languages. Participation in sharing and producing knowledge through the Web can play a key role in the economic, social and educational development of Africa. The research will be of interest for educators, especially in higher education institutions, in teaching African languages through technology. It is important to digitise all our African languages, especially Siswati. These languages can develop and then be found in the digital space in such a way that they can be used or spoken internationally. Another opportunity can be found in the enhancement of the national corpora, the use of other software and open-source platforms like Wikipedia, WordNet, and also the use of technology to teach the South African languages. African languages can indeed be satisfactorily developed in these respects.

Keywords: technology, digital space, African languages, internet, digital teaching

1. Singenisiso

Tilwimi tingumgogodla wesive njengaloku ticuketse emasiko esive lesi lesikhuluma lololwimi. Hulumente waseNingizimu Afrika wente tinchubomgomo letahlukile kutfutukisa tilwimi talabamnyaman Nematiko etemfundvo nawo entile imitamo lehlukene yekutfutukisa tilwimi talabamnyama Saliwa-Mogale (2021). Kufika kwebucwepheshe kubengulolunye luphiko lolwatsatselwa enhloko kute kuhanjiswa nesikhatsi. Intfutuko kutebucwepheshe ibukene netinselele nakufika ekufundzisweni kwetilwini talabamnyama.

Lolucwaningo lutawubukana nekubuka kufundziswa kwetilwimi taseNingizimu Afrika ngemphumelelo ngekusebentisa bucwepheshe kanye nekubakhona kwato ku-Inthanethi. Kuleminyaka lembalwa leyendlulile, bekwatiwa kunebumatima bekufundziswa kwetilwimi tase-Afrika ngetizatfu letinengi letifaka ekhatsi kungabi nemagama langiwo lasetjentiswa kutifundvo tebucwepheshe. Lombono sewushintjile, Ngekushesha lokukhulu kwanyalo kwentiwa kwe-dijital, kantsi netheknoloji idlala indzima lekhulako cishe kuyo yonkhe imikhakha yemphakatsi kanye nakuyo yonkhe imikhakha yemphilo. Loku kuphakamisa sidzingo sekucondzisisa kutsi lomhlaba we-digital usebenta njani, kanye nekutsi ngumaphi ematfuba kanye netingoti letiletfa kungasebentisi lobucwepheshe besimanje ekufundziseni lulwimi lwase- Ningizimu Afrika kanye nekulisabalalisa etinkundleni te-Inthanethi kufaka ekhatsi i-Wikipedia, tincwadzi temagama letitfolakala ku-Inthanethi kanye ne-Lexika kanye nemathulusi ekuhumusha latfolakala ku-inthanethi ekufundziseni. Tilwimi taseNingizimu Afrika bekuwilwimi lebetiloku tisalele emuva ngetintfo letinyenti, lokunye kwako ngiko kutsi atikho Inthanethi(digital platform). Nanobe kunjalo angeke kusetjentiswe njengesizatfu sekutfutukisa umcondvo loliphutsa wekutsi tilwimi tendzabuko taseNingizimu Afrika tingakhoni kukhacita emagama langasetjentiswa kusetjentiselwa tinjongo tekuchumana (Ndebele, 2014:116).

Kwekucala, nekuswelakala kwebucwepheshe kanye nekubambisana emkhatsini wetisebenti tebucwepheshe kanye nelwati lwetilwimi lubeka inselele lenkhulu kunoma ngabe nguyiphi inchubo yekwetfulwa kwetilwimi. Kubukeka ngatsi kunesidzingo lesincane sekubaluleka kwetekucondziswa kwemningwane nekuchumana (ICT). Lokunye lokwentiwa ngulabo labati kabanti ngetintfo tebucwepheshe. Ngalesikhatsi lesifanako, liningi lebacwaningi betilwimi bete emakhono ladzingekele etheknoloji yekwakha nekugucula luhlelo lwekusebenta. Lokungabikho kwekubambisana kuphindze kulumushe, kungabi khona kwekuhambisana netinchubomgomo te-ICT emaveni lamanyenti aseNingizimu emanyuvesi (Ndebele, 2014 :121).

Nakubukwa letingcoco letingenhla, kubalulekile kutsi kwentiwe lolucwaningo loluchubekako kute kutfolwe tisombululo kutincindzetelo telulwimi etinkhundleni tedijithali. Lapha kulolucwaningo kutawubukwa kabanti kufundziswa ngemphumelelo kwetilwimi temdzabu kucondziswa ngco elwimini lweSiswati njengelulwimi labandzakanyeka kulo umcwaningi. Lolucwaningo lutawuchubeka lubuke nekubakhona kwato letifundvo kudijithali. Lolucwaningo lutawuba luphendvula imibu lebutiwe mayelana nemkufundzisa ngemphumelelo tilwimi temdzabu etinkhundleni tedijithali nekutfolakala kwato basebentisi ngalesikhatsi batidzinga,

Kubaluleka kwelulwimi lwaseNingizimu Afrika

Imiphumela yelucwaningo ya-(Department of Education, 2000:8-9; Vermeulen & Desmet, 2000:265; Desai, icashunwe nguVisser, 2000:11; Von Gruenenwaldt, 1999:205; Sarinjeive, 1999:130; De Witt et al., 1998: 119) ikhombisa kutsi kubalulekile kutsi bantfwana bafundze kucabanga nekusebenta ngelulwimi lwabo lwasekhaya kuze kufike ezingeni le-CALP (cognitive/academic language proficiency) bese umntfwana angandlulisela elulwimini lolusha luhlelo lwemininingwane lanayo ngelulwimi lwakhe lwasekhaya. Ngako-ke bafundzi baphumelela kakhulu ekutfoleni lwati lwelulwimi lwesibili uma ngabe sebayati kahle indlela yekuhlanganisa inchazelo yemibhalo ngelulwimi lwabo lwasekhaya (De Wet, 2002:119). Lokhu kukhomba kubaluleka kwelulwimi lwesintfu nekutsi kumele lutfufukiswe kute lufane naletinye tilwimi taseYurophu ngekutsi lutfolakale kuma-Inthanethi. Lolucwaningo luhlose kona kugcizelele kubaluleka kwetilwimi talabamnyama ikakhulukati kutebucwepheshe, Lufuna kuhlola kutsi ngabe tilwimi temdzabu tiya fundziseka yini ngekusebentisa bucwepheshe nekutsi tiyabonakalayini etinkhundleni tedijithali.

Kubaluleka kwekusebentisa kwebucwepheshe ekufundziseni tilwimi taseNingizimu Afrika ngibuka lolunye lwetilwimi emzansi ne-Afrika (Siswati)

Ngekusho kwa Maseko et al., batsi Tilwimi tase-Afrika titsatfwa njengaletifanele tindzawo letisezingeni leliphansi kutsi futsi batsi loku kusekelwa kucabanga lokuliphutsa kwekutsi tilwimi tase-Afrika atikakhuli kahle nekutsi silulumagama singakhoni kuveta inchazelo lecondzile yemagama kwetekucwepheshe (Maseko et al., 2010:313). Ngekusho kwalenkhumalo lengenhla kuliciniso kutsi letinkhundla atikakhuli, tisadzinga kutfutukiswa tinhlangothi tonkhe kute tilwimi tase Afrika tikhona kulingana netilwimi temhlaba lesetidlala indzima lenkhulu etinkhundleni tekuchumana nasekutfoleni lwati.

Kubaluleka kwekubakhona kwetilwimi taseNingizimu Afrika ku-Inthanethi.

Kuleminyaka lembalwa leyengcile, kukhula inombolo yetinsita letimayelana netilwimi tase-Afrika yavela ku-Web.Leti tincwadzi ticondziswe ku-inthanethi, tivame kulondvolotwa bantfu labakhuluma letinye tilwimi. Ngesikhatsi lesifanako, imitamoleminyenti yentiwe kuhumusha tinhlelo tekusebenta (kungaba nge-desktop nobe i-Web-based) tilwimi tase-Afrika.I-Windows XP seyivele iyatfolakala ngesiKiswahili, siSetswana nesiZulu, (Maseko et al., 2010: 316).

Tinkinga letibukene ngekubakhona kwetilimi taseNingizimu Afrika ku-Inthanethi

Kunemcabango wekutsi lulwimi lwase-Afrika alinako kubaluleka kwalencenye yelulwimi emmangweni ikakhulu nasibuka etilwimini tase taseNingizimu Afrika elulwimini lweSiswati. Kungabikhona kwetimali tekwenta lomsebenti. Lokunye lokubayinkinga lenkulu kutsi banikati belulwimi bangafuni kulitfutukisa kwalona lulwimi lwabo

Kulesihloko,Umchwani utawucoca ngetindlela letisebentako. Umchwani kumele atfole tfe tiphakamiso tekutsi lemisebenti ingabukeka njani, nasebentisa imibhalolekhona kanye naloku lokutfolakala esikhungweni setemfundvo lephakeme lapho kufundziswa khona bothishela basetikhungweni temfundvo lephakeme lapho tifundvwa khona ngelulwimi lwesiNgisi.

Kufundzisa Tilwimi taseNingizimu Afrika ngeTheknoloji kungaletsa bafundzilabatawuhlomisa ngemakhono endvulo yema-21 (21st century skills) futsi bakhone kusebentisa lwati lolutfolakala ku-digital space. Loku kungakhulisa emazinga ekutsi bafundzi bakhone kutfolela umsebenti. Loku kumelela intfutuko lebonakalako ekuvisiseni nasekukhutsateni tinchubo tekucasheka letisolo tifundziswa ngemibonolelinganiselwe yebantfu kanye nekukhanyiselwa (Geitz & De Geus, 2019).

Loluhlelo lwekugcina lugcizelela kakhulu indzima yekufundza kwemfundzi ngamunye emfundvweni lephakeme ekuncumeni emazinga ekusebenta, kubaluleka kwekucindzetela bacashi labangahle babe khona kutsi batsandze imikhuba letsite yebantfu, kanye naletinye tintfo letiningi letibukisisiwe futsi letiletfwa etafuleni kute kucociswane ngato futsi tihlolisise (Edgerton & Roberts, 2014). Ekucaleni, imfundvo lephakeme kumele inikete lusito kubafundzi lababhalisiwe nalababhalise etikhungweni temfundvo lephakeme. Lolucwaningo lugcile ekwakheni emasu lasita imfundvo lephakeme kutsi ikhulise timo tekufundza letichubekako kute itfutukise emazinga

ekucashwa kwebafundzi bayo ngekubafundzisa basebentisa bucwepheshe balamuhla lesitsi yi-thekhinologi.

2. Tinhloso telucwaningo

Tinhloso talolucwaningo kubuka kwekutsi kungentiwani kute kufundziswa kwetilwimi taseNingizimu Afrika ngekusebentisa bucwepheshe nekubakhona kwato ku-Inthanethi kube yimphumelelo. Lolucwaningo lutawuphindze lubuke netisayeya letibakhona kulendlela yekufundzisa yesimanje lekubuye kufake ekhatsi kusatjalaliswa kwato.

3. Umbuto welicwaningo

Kungentiwa njani kutsi kufundziswa kwetilwimi taseNingizimu-Afrika ngebucwepheshe besimanje nekubakhona kwato ku-Inthanethi kube yimphumelelo?

Kungentiwa njani kutsi titfolakale tisabalele ku-Inthanethi tibuye titfutukiswe nasekutisebentiseni ekufundzeni nasekufundziseni?

4. Kubuyeketwa kwemibhalo (Literature review)

Kuhlolwa kwetincwadzi letihlobene nekufundvwa kwetilwimi taseNingizimu Afrika ngekusebentisa bucwepheshe.

Kufundzisa tilwimi ngekusebentisa itheknoloji kulelive lase-Afrika sekutfole kunakwa kakhulu kuleminyaka lembalwa leyengcile ngenca yematfuba ekwenta ncono kufinyeleleka emfundvweni lesezingeni lelisetulu, kukhulisa imiphumela yekufundza, kanye nekubukana naletinye tineselele letihlangabetana netindzawo tekufundzela tesintfu. Nankha lamanye emaphuzu labalulekile kanye netihloko letakheka ekubukisiseni tincwadzi kanye nasetincwadzini letifundvwako ngalenzaba:

Kulemigudvu yelucwaningo kutawubukwa leminyane imibhalo. Loku kutawenteka ngekutsi kubukwe lucwaningo leliphatselene nekufundziswa kwetilwimi taseNingizimu Afrika Ngekusebentisa Bucwepheshe nekubakhona kwato ku-Inthanethi leliseke lentiwa eNingizimu neAfrika kanye nakulamanye emave angaphandle. Loku kuyobe kwentelwa kutsi umfundzi abone sidzingo sekwenta lolucwaningo. Emuva kwekubuka lucwaningo leliseke lentiwa sitawubuka letinye tindlela tekufundzisa lulwimi ngekusebentisa bucwepheshe baleminyaka nekutsi singalusabalalisa njani etindzaweni tedijithali.

Lukhona lona lucwaningo loselwentiwe mayelana nekufundziswa kwetilwimi taseNingizimu Afrika Ngekusebentisa Bucwepheshe nekubakhona kwato ku-Inthanethi leliseke lentiwa eNingizimu neAfrika kanye nakulamanye emave angaphandle. Bacwaningi abakase balwenta lonkhe lucwaningo ngaloko lebafuna kukwati kepha lokunye kuyasala. Lapha-ke sitfola kutsi lusengakabikhona lucwaningo loselentiwe ngekubuka kutsi luyafundziseka yini luwimi lweSiswati lokungulelinye lulwimi lolusemtsetfweni eNingizimu Afrika. Angeke sifane nalamanye emave lasebentisa Singisi. Lokunye futsi kuletinye yelulwimi lolukhona eNingizimu Afrika njengeSiNdebele alukho nekubakhona naku-Wiklpeadia.

Kuyabonakala kutsi bacwaningi labaningi babuke kakhulu kutsi becwepheshe busentjetiswa njani etikolweni temabanga laphasi nalasetulu kukharikhulamu yonkhe.

Lucwaningo Lolwentiwe eNingizimu Africa

Lucwaningo lolwentiwe eNingizimu Afrika luye lwaveta tindlela letehlukene kanye netinsayeya ekufundziseni tilwimi tase-Afrika ngekusebentisa itheknoloji. Lenye indzawo lebalulekile yekugcila kusetjentiswa kwemathulusi edijithali kanye ne-ICT kute kutfutukiswe kufundvwa kanye nekulondvolotwa kwetilwimi tendzabuko.

Simo setilwimi eNingizimu Afrika

Bacwaningi labafana nab Bamgbose (2011); Chukwuere & Chukwuere (2017); Gudhlanga & Makaudze (2012); Ndimande-Hlongwa & Ndebele (2017); Omojola, (2009). Bayavuma kutsi ludzaba lwetilwimi eNingizimu Afrika luyindzaba lephikisako futsi ibesenzaweni lesemkhatsini yemzabalazo wenkhululeko eNingizimu Afrika. SiNgisi sibusa cishe tonkhe tinhlangotsi tempakatsi waseNingizimu Afrika, kepha akusilo lulwimi lolusetjentiswa kakhulu nobe lolusetjentiswa kakhulu eNingizimu Afrika. Njengaloku, inkhulumo yanyalo yetama kubuka tindlela tekuphakamisa lizinga letilwimi tendzabuko tase-Afrika kanye nekucinisekisa kutsi tilwimi tase-Afrika tidlala indzima esikhatsini sedijithali nelwati (Omojola, 2009).

Kwehlukana ngekwedijithali

Moodle (2021) ubeka umbono wakhe wekutsi ngekwesintfu, kwehlukana ngekwedijithali eNingizimu Afrika bekubukwa ngekuya kwekutfolakala kwe-ICT kanye nemakhono e-ICT nobe kungabi khona kwawo. Kukhona inkhulumo lencane kepha lekhulako lekhuluma ngekutsi kungabi khona kwetilwimi tendzabuko tase-Afrika ku-ICT kungaba yintfo leyenta kube khona kwehlukana kwe-digital. Loku kukhulisa kuphindze kwesekele inkhulumo letsi kuphumelela ekubhekaneni

nekwehlukana kwedijithali kusho kuniketa lokungetulu kweticelo kanye nemakhono e-ICT.

Moodley (2021) uchubeka asho kutsi Ngetulu kwaloko, kumele kubukwe kabanti ekufundziseni nasekufundzeni lokuchutjwa bucwepheshe emfundweni lephakeme eNingizimu Afrika kuleminyaka lengemashumi lamabili lendlulile kuveta kugucuka lokukhulu lokucondziswe emfundweni ye-digital. Loku kufaka ekhatsi kusetjentiswa kwemapulatifomu ekufundza nge-e-learning, ematheknoloji lahambako, naleminyane imitfombolusito ye-digital yekusekela kufundziswa kwetilwimi tase-Afrika.

Lucwaningo lolwentiwe e-Afrika

Lucwaningo e-Afrika lonkhe lukhombise tindlela letehlukene tekufundzisa tilwimi tase-Afrika ngekusebentisa itheknoloji, kugcizelelwe kutfutukiswa kwemiphumela yetemfundvo kanye nekulondvolotwa kwemagugu emasiko.

Babirye et al. (2022) Batfole kwekutsi E-Kenya, kwentiwe imitamo yekuhlenganisa ematheknoloji e-AI ekufundzeni tilwimi. Loku kufaka ekhatsi kutfutukisa emathulusi e-AI etilwimi tase-Afrika, njengetinhlelo tekutfole inkhulumo letisebentako kanye nemisebenti yekuhumusha. Lamathulusi anenhloso yekucedza kwehlukana ngekwedijithali kanye nekwenta bucwephesha bufinyeleleke kubantfu labanyenti labakhuluma tilwimi tase-Afrika, kuphindze kusite kulondvolotwa kwetilwimi kanye nemfundvo.

Batfole kwekutsi eNigeria, ema-digital platforms lafana ne-Izesan! letentelwe kufundzisa basebentisa tilwimi letehlukene tase-Afrika. Kucala ngelulwimi lwesi-Esa, si-Isean! sewandze sahlenganisa siYoruba, siSwahili, siHausa, si-Igbo, kanye naletinye tilwimi. Letitindlela tekufundza ngelucingo tisebentisa imitfombolusito yemultimedia kwenta kufundza tilwimi kucocisane futsi kuhehe.

Kwengeta lapho, lucwaningo lolwentiwe ngulabacwaningi labangenhla ngetheknoloji yedigital ekufundziseni tilwimi luye lwaveta likhono lekusebentisa tihlelo tekusebentisa tandla, tifundvo letitfolakala ku-inthanethi, kanye nalamanye emathulusi ekufundza tilwimi tase-Afrika. Lobu bucwepheshe busekela tindlela letehlukene tekufundzisa, letifana nekwentiwa kwemidlalo kanye nalokucuketfwe ngekusebentisana, lokutfutukisa kufundza.

Utsi Khowaja et al. (2024) Luhlaka lwema-Digital Divide, Lenye yetisayeya letinkhulu ekusetjentisweni kwetheknoloji ekufundziseni tilwimi e-Afrika, luhlaka lwema-Digital Divide. Kungalingani ekufinyeleleni kutetheknoloji naku-Inthanethi emkhatsini

kwetigodzi letehlukene kanye nemacembu etenhlalo netemnotfo kungavimbela kusebenta kahle kwetinyatselo letinjalo. Batsi kusukela kwasungulwa i-chatGPT, kwacaca kutsi lelipulatifomu lingakhulisa kukhucita kanye nemkhucito webafundzi, bafundzisi, bacwaningi, bacambi bematheksthi kanye nalabanye. Kusukela Kulesinye simo, kusalindzeleke kutsi kubonwe kutsi ngubani lotawenta lomsebenti batawuzuzo kakhulu ku-chatGPT, nekutsi kutawuba namtselela muni emave lahola kancane kanye netisebenti eNingizimu (Khowaja et al., 2024:11).

Ngakulolunye luhlangotsi Kusetjentiswa Kwetheknoloji Yetekuchumana ,kusetjentiswa kweTheknoloji yeTelula Ngekubona kusetjentiswa kakhulu kwetincingo tebucingo e-Afrika, tifundvo letinyenti tihlolisile likhono lekusebentisa itheknoloji ye-mobile ekufundzeni tilwimi. Kusetjentiswe ema-mobile apps, tindhlelo tekufundza letisekelwe kuma-SMS, kanye netindhlelo tekufundzisa letentelwe kusetjentiswa tindhlelo tekuchumana kute kufundvwe tilwimi (Amir, 2024:12).

Kuhlola nekuphendvula Itheknoloji ingenta kutsi kuhlolwa nekuphendvula ngendlela lecondzile kube ngulokuncono ekufundzeni lulwimi. Tindhlelo tekufundza letigucukako, emathulusi ekuhlola lacondzile, kanye netindlela tekuphendvula ngekushesha kungasita bafundzi kutsi balalele inchubekelembili yabo baphindze bakwati kutfolo tindzawo labangacinisa kuto.

Tikhalo Tekucwaninga kanye Nemikhombandlela Yesikhatsi Lesitako, Kubuyeketwa kwetincwadzi letinyenti kugcizelele sidzingo selucwalingo lolucinile mayelana nemtselela wetheknoloji kumiphumela yekufundza tilwimi e-Afrika. Tifundvo tesikhatsi lesitako tingagcila ekuhloleni tindlela tekusebenta letikahle, kuhlola kusebenta kahle kwetheknoloji letsite, kanye nekutfolo tintfo letivimbela kusetjentiswa.

Ngekuphetsa, nanobe kunetincwadzi letinyenti letikhuluma ngekufundziswa kwetilwimi ngekusebentisa tebuchwephesha kulelive lase-Afrika, kusetinsayeya nematfuba lamanyenti lekumele kucatjangwe ngawo. Lucwaningo loluchubekako kanye nekusungula lokusha kulenzawo kungafaka sandla ekwakheni tindlela letisebenta kancono kanye naletibandzakanya wonkhe umuntfu tekufundzisa tilwimi e-Afrika.

Xulu (2024) ungulomunye wetifundziswa labacwaninge kakhulu ngekufundziswa kwetilwimi taseNingizimu Afrika ngeTheknoloji futsi umsebenti wakhe usikhutsate kakhulu. Umsebenti wa Xulu ufake sandla ekwakheni lwati lwekutsi kungani tilwimi tase Ningizimu Afrika ikakhulukati uma ucabanga nge Siswati kumele tifundzise ngekusebentisa itheknoloji. Ndebele yena wavumelana naye wabuye wengeta ngekutsi

kubalulekile kuba nendlela yekubhala, indlela lefanako yekubhala, indlela yekubhala(the orthography) (Ndebele, 2014: 119).

Lucwaningo lolwentiwe emaveni angaphandle

Lucwaningo ngekusetjentiswa kwetheknoloji ekufundziseni tilwimi tase-Afrika luya ngekuba nemandla emaveni emhlaba, lokuchutjwa tinhlobonhlobo tetindlela tekusebentisa tebucwepheshe netilwimi. Tintfo letimbalwa letibalulekile kanye netifundvo tiyakhombisa loku.

Noor et al. (2022) Balandzisa batsi kuhlangukiswa kwedijithali emanyuvesi aseNingizimu Afrika: tikhungo temfundvo lephakeme eNingizimu Afrika tihlanganisa lwati netinhlelo tekuchumana (ICT) kute kufundziswe tilwimi tendzabuko. Loku kufaka ekhatsi kusebentisa emathulusi kanye nemapulatifomu e-digital kute kwakhiwe kufundza lokucwilisako. Kwenta sibonelo, tinhlelo letichubekako tekwatisa kanye nekutfufukiswa kwemikhuba ye-digital kuyanconywa kute kuhlangukabetwane netinhloso te-United Nations Sustainable Development Goals tekwemukela imfundvo lesezingeni lelisetulu nga-2030.

Kubandzakanyeka kweSayensi neTheknoloji: Imetamo iyentiwa kufaka tilwimi tendzabuko tase-Afrika (AILs) enkhulumeni yesayensi kanye nekwati kufundza nekubhala kwedijithali. Bososayensi sebente emagama lasebentako etilwimini letifana nesiNguni kanye nesiShona, kantsi netinyatselo tekuhumusha ngesiSwahili tenta emalungelo elucingo kanye nekwati kufundza nekubhala kutfolakale kalula. Lemizamo ibalulekile ekuhlangukiseni bantfu bendzawo kutesayensi kanye nasetimbonini, kukhombisa kutsi ema-AIL angendlulisela imicabango yesayensi lematima ngemphumelelo (Manyike & Shava, 2018).

5. Imfundziso-njululwati (theoretical framework)

Actor network theory (ANT)

I Actor network theory nguyo lekhetselwe kuchuba lolucwaningo. Yona letiyori ichazwa ngekutsi ingumcondvo wekusungulwa kwenethiwekhi lapho khona bantfu kanye nalabangasibo bantfu batsatsa bantfu (Ceder, 2018:108). Lapha-ke ekufundziseni lulwimi lwaseAfrika sibuka kutsi nome ngabe nguliphi luhlobo lwentfo ingaba ngumuntfu nome kungasuye umuntfu yingce uma itasisita ekusebentiseni bucwepheshe besimanje kufundzisa nekufundza lulwimi lwase-Afrika. Lapha ke-siyatfola kutsi tinyenti tintfo lesingatisebentisa kufaka ekhatsi lulwimi lesilikhulumako, emasiko esintfu, kudla kwesintfu kumbatsa kwetfu, tingoma lesitihlabelako, konkhe loko

singakufundzisa sisebentisa bucwepheshe besimanje futsi kona loko singakusabalalisa ku-Inthanethi kute wonkhe umuntfu akutfole ngekushesha Lapha, sibuke kutsi yini lehlanganisa bantfu netintfo letingaphili futsi ngaleyo ndlela kwakheke inethiwekhi, kufundzisa ngekuhlela. Loku kufakazelwa ngu Bencherki (2017). Nakatsi I- Actor Network theory (ANT) inika ludvumo kunobe ngabe yintfo injani, kungakhatsaleki kutsi, ikusiphi simo. Kulolucwaningo, tintfo tebantfu kanye naletingasibo bantfu titawubukwa njengobe kubukwa tindlela teku fundziswa kwelulwimi ngebucwepheshe nangetindlela letimisiwe te dijithali. Kute usebente kahle, udzinga tento tebantfu, umfundzi, thishela, baphatsi, kanye netento letingasibo tebantfu, bongcondvomshini netinchubo tekuchumana, kanye naletinye. Timphawu te-ANT letichazako, bantfu kanye nalabangasibo bantfu (tintfo letinemandla ekutsintsa inethiwekhi yetenhlalo) tibonwa njengalokufanako, ngekulingana lokulinganako kwe-ejensi (umtselela) kubontsanga yabo (Carroll, 2018:247-261).

6. Tindlela tekucwaninga

Patten (2016) ukubeke kwacaca kutsi tintsatfu tindlela tekucwaninga letetayelekile bacwaningi labangatikhetsela kuto lapho nabachuba tincwaningo tabo. Utsi kunendlela ye-*qualitative*, ye-*quantitative* kanye nalehlanganisa leti letimbili lesetibaliwe. Umcwaningi utikhetsela yena indlela letawuhambisana nekucocwa kwedatha latayisebentisa kanye nekuhlaliywa kwayo. lotayikhetsa incunyuwa luhlobo lwedatha lofise kuyihlatiya elucwaningweni lwakho, Ngaleso sizatfu kubalulekile kutsi locwaningako akwati kukhetsa indlela lefanele latawuchuba ngayo lucwaningo lwakhe (William, 2011:1). Lolucwaningo lutawusebentisa indlela yekhwalthetivu. Indlela ye-*qualitative* ngulena lefaka ekhatsi kuhlatiya kwelwati lolungenako kusebentisa tinombolo, kodvwa lubuke kuhlatiya lwati lwembhalo wemagama (Bryman, 2008:366). Loku kunanelwa nanguMason (1996:123) nakachaza loluhlobo lwe-*qualitative* atsi:

... it is an umbrella term for an array of attitudes towards and strategies for conducting inquiry that are aimed at discovering how human being understand, experience, interpret and produce the social world.

Lakushoko Mason kutsi lucwaningo lwe-*qualitative* lungasetjentiswa etimeni lapho nakufuna kuvisiswa tincenye temphilo kwentela kusombulula tinkinga tetenhlalakahle. Tincwaningo letisebentisa lendlela yekucwaninga tinguletinemibuto levulekile, lokusho kutsi timphendvulo takhona tiyakwati kwenaba tichazisise (Techo, 2016:3). Kantsi loku kungentiwa ngendlela yekuhlatiya umongo welwati lolucwaningwako (Williams, 2007:67). Haradhan (2018:15) ungeta kulenkhumo utsi ngalendlela ye-*qualitative* kungahlaliywa umcondvo lotfolakala emagameni, titfombe, imiculu,

emabhuku, emaphephandzaba, emafilimu, buciko kanye naleminye imikhicito yetemasiko, ingci nje nakungeke kube netinombolo kanye netibalo.

Ngesizatfu sekutsi umcwaningi utawubuka emadokumenti, tincwadzi tekufundza nekufundzisa lulwimi lweSiswati netincwadzi tetivivinyo tebafundzi kucoqa lwati lolwanele lolutawuphendvula imibuto yalokucwaningo. Ngetulu kwekukhetseka kwendlela yelucwaningo, umcwaningi usebentise indlela yekukhetseka ngenjongo (purposive) ngobe phela bekakhetseka letotincwadzi noma imiculu labona kwekutsi itamsita kutfolala lwati lolwanele, Ekufezekiseni loku, umcwaningi ukhetse ticwadzi letine tekufundza nekufundzisa wase ukhetseka imiphumela yebafundzi lesitfupha yalabacalako nalemitsatfu yebelibanga lesibili wase utsatsa labane belibanga lekugcina kubafundzi labafundzela buthishela enyuvesi. Onkhe lamadokumenti bekungulawa latsintsa nekufudza kufundzisa lokubandzakanya bucwepheshe netinkhundla tedijithali. Kuletinkhambiso.

Tiningi tindlela tekucwaninga umcwaningi langatisebentisa ngalesikhatsi enta lucwaningo kepha ucwaningi ukhetseka tindlela letitawuhambisana nelucwaningo lwakhe. Lenye yetindlela lelitawusetjentiswa lapha kulelicwaningo indlela ye – (participatory action research).

Yena usibekela utsi kusentjentiswa kwalendlela yelucwaningo kunemtselela lomuhle njengobe lolucwaningo lwenteka enfundvweni lesemtsetfweni lemayelana nebantu hhayi tintfo futsi yenta bonkhe labadlala indzima njengabo bafundzi bemfundvo yemabanga lasetulu abalalelwe futsi emavi abo ahlonishwe.

Kufundvwa kwetincwadzi letiphatselene nekufundziswa kwetilwimi taseNingizimu Afrika ngekusebentisa bucwepheshe, nekusebentisa umsebenti webafundzi labenta tona tifundvo ngendlela yebucwepheshe Kwaba lula kutfolala leminingwane ngobe yonkhe imisebenti yabo indlula kumfundzisi wabo longumcwaningi walolucwaningo loluchubekako. Kucocwa kwemingwane yelucwaningo, njengemfundzisi welulwimi lweSiswati kubamatima kutfolala emagama eSiswati ku-Inthanethi. Bafundzi banikwa umsebenti lekumele kutsi bente lucwaningo lawo khona kuma-Inthanethi kute bente imisebenti yabo babuye bafundzise basebentisa ithekhinoloji, ekufundziseni kwabo njengabothishela labasaceceshelwa buthishela. Imisebenti leyentiwe ngebucwepheshe yahlolwa kute kubonakele inkinga noma imphumelelo yekuchuba tifundvo ngendlela yebucwepheshe.

Umfundzisi uyawuhlola umsebenti webafundzi bese ubuyisela tincomo kubafundzi, loko kungumkhuba lomuhle wekwatisa bafundzi kutsi basebente njani emsebentini

lebanikwe wona. Kulapho ke umcwanini walolucwaningo atfole khona litfuba lekubuka leyo misebenti kute atfole timphendvulo talolucwaningo.

7. Kuhlaliywa kwedata

Kungumhambo wekucwaninga kwekutsi naselucokelelwe lonkhe lwati lolucwaningwako lubese luyahlaliywa ngendlela letawusita ekutfoleni imiphumela kanye netimphendvulo temibuto yelucwaningo (Flick, 2014:3). Nakulolucwaningo yonkhe lemiculu lekhetisiwe ihlaliywe ngekwehlukaniswa tindzinyana letinetigcikitsi letitawuphendvula imibuto yelucwaningo. Uma kuchutjwa lucwaningo, ngendlela leyikhwalithethivu, lunyenti lwati lolucokelelwako lubuye luhlaliywe ngendlela yekuhlunga loko lokuphendvula imibuto lebutwa lucwaningo. Ngekusho kwaCresswell (2014: 45) utsi, pheceleti:

Researchers make interpretations of the statistical results, or they interpret the themes or patterns that emerge from the data. In some forms of research, both quantitative and qualitative data are collected, analyzed, and interpreted.

Ekuhlanganiseni lwati lwami, bengifuna kuhlola tinsayeya kanye netimphendvulo letihambisanako ekufundziseni tilwimi taseNingizimu Afrika ngekusebentisa itheknoloji kanye nekuba khona kwayo esikheleni sedijithali.

Kwekucala, kuhlolisisa tineselele ekufundziseni tilwimi taseNingizimu Afrika ngekusebentisa itheknoloji kanye nekuba khona kwayo kumhlaba we-dijithali. Ngakoke, luhlolo lwetindlela tekuphendvula/tetisombululo kuletinchabhayi letitfolakele lutawuhlela indlela yekusombulula letinchabhayi. Idata lecociwe itawu hlukaniswa ngetigcikitsi letitsite letitawuphendvula imibuto yelucwaningo.

8. Ingcoco ngalokutfolakele kulolucwaningo

Lokutfolakele kulolucwaningo kuyekwahlelwa ngetindzinyana kute kwehlekeke kahle kungadidiyelekindzawonye.

Impumelelo yekufundza nekufundzisa lulwimi

Lucwaningo lutfole kewkutsi setandzile tindlela tikhombisa indlela lebanti tekusebentisa itheknoloji kutemfundvo, ikakhulukati naseTilwimini Temdzabu ngenhloso yekulondvolota nekutfufukisa tilwimi tase-Afrika kulesikhatsi sedijithali.

Imetamo yekwenta ncono imfundvo kanye nekulondvolota emagugu emasiko ngekusebentisa itheknoloji ekufundziseni tilwimi tase-Afrika iyachubeka ngekushesha kuyo yonkhe i-Afrika. Letinhlelo tikhombisa tindlela letinsha letisebentisa emathulusi edijithali kanye nebuhlakani bekwenta lwati lwetilwimi lufinyeleleke futsi luhehe.

Imiklamo yekusebentisana nemave emhlaba: Kunemiklamo leminyenti yekusebentisana lehlose kusebentisa itheknoloji kulondvolota nekufundzisa tilwimi tase-Afrika. Sibonelo saloku kutsi emakhadi ekuhumusha kanye netincwadzi tekuhumusha te-digital tiyasungulwa kute kucedvwe kungevani kwetilwimi ekuchumaneni nge-digital. Lemiklamo ayigcini nje ngekutfutukisa kufundvwa kwetilwimi kodvwa iphindze isekele kulondvolotwa kwemasiko nekusakatwa kwelwati.

Sibuye sengete ngekutsi Tincumo Letentiwe Ngalokwetayelekile: Kubambisana kuvumela kutfutukiswa kwetincumo te-digital letentelwe bantfu letibukene netinsayeya letitsite letibukene netikolo letehlukene nobe tifundza letehlukene, kwenta kuhlanganiswa kwetheknoloji kusebente ngemphumelelo.

Ngekuphetsa, kusebentisana kwalabatsintsekako ekufundziseni nasekufundziseni ngebucwephesha kucinisa inchubo yekwemukelwa, kwenta ncono kusetjentiswa kwemitfombolusito, kanye nekucinisekisa kutsi ematheknoloji etemfundvo ahlanganiswe ngemphumelelo ekufundziseni nasekufundzeni.

Ngalokuvamile, kuhlanganiswa kwetheknoloji ekufundziseni tilwimi tase-Afrika kubonwa njengendlela letsembisako yekuncoba tintfo letivimbela kufundziswa kwetilwimi nekucinisekisa kutsi leti tilwimi tihlala tiphila futsi tifaneleka esikhatsini sedijithali. Loku kuyincenye yeluhlelo lolubanti lwekukhutsata kwehlukahlukana kwetilwimi kanye nekukhulisa imiphumela yetemfundvo kulo lonkhe lelivekati.

Kubakhona kwetinsita kufundza tebucwepheshe

Ngekwemiphumelo yeluluhlatiyo lwalolucwaningo kuyabonakal kutsi akakeneli emathuluzi lekumele asetjentiswe kute bafundzi batfole tfole lonkhe lwati lebaludzingako lidzingako. Kuyabonakala kutsi kwabelana ngemitfombolusito kubalulekile: Labatsintsekako bangahlanganisa imitfombolusito, kungaba ngeyetimali, tebucwepheshe, nobe yebantfu, kusekela inchubo yekwenta i-digitization. Loku kungenta kutsi kusetjentiswe ematheknoloji lamasha kube lula futsi kube ngulokuchubekako. Lokuvamile lokuvela kubo bonkhe labatsintsekako kusita ekwentiweni ncono lokuchubekako kwemathulusi nemasu ekufundzisa ngedijithali.

Lenchubo lephindzekako icinisekisa kutsi itheknoloji ihlala ifanelekile futsi isebenta kahle ekutfufukiseni imiphumela yekufundza

Kubambisana lokuchubekako nalababandzakanyekako kuvumela kutfutukiswa kwebungcweti kwebafundzisi. Kucecehwa kanye nemihlangano yekusebenta kungahlelwa kute kusite bothishela kutsi bahlanganise itheknoloji emasu abo ekufundzisa ngemphumelelo.

Kubametima kutfola imininingwane lebbhalwe ngeSiswati kute kufika lapho bafundzi basebentisa I-ChatGPT bese bahumushela eSiswatini. Lenye yetindlela yekucoca lwati, kuhlatiya netindlela tekukhuluma nasekufuneni lwati ekucwaningeni ngekufundzisa kwelulwimi ngemphumelelo ngekusebentisa bucwepheshe. Loku kuniketa luhlaka loluhleliwe lekubukana nemibuto yelucwaningo kanye nekuphumelelisa imigomo yelucwaningo. Lokunye lokuchubela inkhinga kutsi Siswati sisengakabi nawo emagama etheknoloji nekutsi nanome sitsi siyawafuna asiwatfoli ngebe awekho nasetindzaweni tedijithali,

Tinsayeya letikhona ekufundziseni lulwimi ngemphumelelo kutebucwepheshe

Lenkhulumo leshiwo ngulabafundzi laba-3 iniketa umcondvo wekutsi bafundzi abakafundziswa kutsi kahlekahle nakukhulunywa ngetheknoloji kukhulunywa ngani futsi isebentiseka njani nini. Kletimphendvulo letiniketive kuyacaca kutsi kusesekhona lokumelwe kulungiswe lokumacondzana nekufundziswa kwetilwimi taseNingizimu Afrika Ngekusebentisa Bucwepheshe nekubakhona kwato ku-Inthanethi.

Loku kufakazelwa lokushiwo (Ndebele, 2014: 119) nakatsi, kute lulwimi lukhone kufaka sandla ngemphumelelo emnotfweni welwati ngetindlela letehlukene, kumele ube netintfo letitsite letenta lulwimi lukhone kusebenta ezingeni lelisetulu nobe lolwenta lulwimi lukhone kusebenta kahle. Ngalokuvamile, udzinga incenye letsite yalolo lwimi. Uma sewutfole lomtimba, uyavela. Kutfolakala kwe-corpus kusho kutsi njengemuntfu lochuba luhlelo, udzinga kuba netincwadzi ngalolo lwimi bese ugucula leto tincwadzi tibe yi-corpus. Kutsi ube nemibhalo ngalolulwimi, kusho kutsi kufanele ube nendlela yekubhala, indlela yekubhala lefanako, indlela yekubhala.

Sitfola (Maseko et al., 2021: 321) atsi:

The actual usefulness of Web resources in African languages needs to be further discussed and problematised. Maşoeu and de Villiers (2001) conducted a survey on the attitudes of speakers of African languages in South Africa towards the use of Web content in their mother tongue. They note that, at the present stage,

making Web content available in African languages serves more a symbolic than an instrumental function. In other words, its main contribution is the promotion of the status of the African languages rather than increasing access to technology for their speakers.

Loku kuchaza kutsi hhayi kutsi atikho tindzawo lapho ungangatfolakala khona lwati lweSiswati etindzaweni tedijithali , kukutsi tona akusito letinengi .Loku kusho kutsi usesemnengi umsebenti lokumele wentiwe wekutfutukisa lulwimi lweSiswati lubuye lusatjalaliswe etindzaweni tedijithali.

Lemininingwane ikhombisa kutsi kufundzisa tilwimi tase-Afrika ngekusebentisa itheknoloji kanye nekuba khona kwayo kulesikhala sedijithali akukeneli kantsi nekutfutukiswa kwaloluhlelo kuhamba kancane.Mayelana nema-website etilwimi tase-Afrika, i-Wikipedia letitfolakala kuletinye tilwimi tendzabuko taseNingizimu Afrika tilwimi, i.e. isiXhosa, isiZulu ne Sesotho. Nobe kunjalo, kufundza Lokucuketfwe kumawebhusayithi esiXhosa ngalokucacile, kubukeka kusadzinga kwentiwe kute kucinisekiswa kutsi emagama lasetjentiswa nekhwalithi yelulwimi.

Imiklamo leminingi kanye netinhlangotho tibekwe ekukhutsateni tilwimi tase-Afrika emkhakheni we-ICT. Umklamo we-African Network for Localisation (ANLoc) (<http://www.africanlocalisation.net/>) uchuba i-website lenako konkhe lokwentiwako mayelana ne-ICT kanye netilwimi tase-Afrika. Lesi sibonelo se-web-based reference yemitfombolusito ye-ICT (emawebhusayithi, tinhlelo, ema-spellcheckers, umbhalo-ku-speech njll.) ngetilwimi tase-Afrika nangetilwimi letitsite. Lencwajana ichaza imiklamo netinhlangotho letibukene netilwimi letehlukene nemisebenti kulo lonkhe lelivekati.

Kufundziswa kwetilwimi taseNingizimu Afrika Ngekusebentisa itheknoloji

Kufundzisa tilwimi taseNingizimu Afrika ngemphumelelo ngekusebentisa tebucwepheshe kuphatanyiswa kungalingani lokutsite lokutsintsa kuba khona nekutfolakala kwato ku-Inthanethi. Lokungalingani kungehlukani ngekwebucwepheshe, ngekwenhlabakahlale, ngekwetilwimi, kanye nangemfundvo.

Kungalingani kwetilwimi

Kutfolakala Kwema-Dijithali khontenti (Digital Content): Tilwimi taseNingizimu Afrika atibonakali kahle kuma-digital content. Tintfo letinyenti letifundvwako ku-inthanethi titfolakala ngetilwimi letisetjentiswa kakhulu njengesingisi, siFulentji kanye nesi-Arabhu, lokwenta bantfu labakhuluma tilwimi tendzabuko taseNingizimu Afrika bangabanjwa.

Kuvumelana Tilwimi: Tilwimi letinyenti tase-Afrika tite indlela levumelanako yekubhala, lokwenta kube matima kwakha tinsita tekufundza letihambisanako.

Letinselele tifaka ekhatsi lizinga lelisetulu lekungasebenti, buphuya kanye nekungalingani kwebantfu. Loku kuyakhula ngalesinye sikhatsi kubafundzi etindzaweni tetemnotfo netenhlalo letifuna emazinga lasetulu ekusebenta kwebucwepheshe. Klaus Schwab, (2016) wachaza indlela yekuhlangana kwebucwepheshe, lebitwa ngekutsi Kuvuselelwa Kwemboni Yesine, The Fourth Industrial Revolution (4IR), lebeyitsembise kuhlanganisa tintfo letitfolakalako, letitfolakalako, kanye netintfo letiphilako, lokutitsintsa tonkhe tifundvo, kanye nekulungisa tibuye tihlele kahle tintfo letiningi ekuphileni kwebantfu (Schwab, 2016).

I-4IR yamukelwa ngemdlandla ngulabanyenti njengobe yetsembisa kukhula kwemnotfo kanye nelushintjo loluphelele endleleni umhlaba losebenta ngayo, ngekuhlanganiswa kwetheknoloji lefana ne-Artificial Intelligence, iRobotics, i-Internet of Things (IoT).

Kuswelakala kwelwati lolusetulu ngetebucwepheshe

Kulolucwaningo kubonakele kwekutsi bafundzi beSiswati abakabi nalo lwati lolwanele loku bukana netigcinamba tekufundza ngedijithali. lokubekutabenta bakwati kubukana netingucuko te timboni tesine. Lwati lolusezingeni lelisetulu, njengelwati lwe-4IR, lungaba yingoti lenkhulu kumakethe yemisebenti lengenalo lwati lwetebucwepheshe kanye nelwati lwekusebenta, njengoba leminyane imisebenti itawuba yintfo lengenamsebenti futsi leminyenti itawudzinga kucatjangwa kabusha ngemakhono lamasha etinhlakeni letisetulu (Schwabs, 2017).

Kusobala kutsi kuyadzingeka kutsi kube netinhlelo letifaka ekhatsi bonkhe bantfu: Kufaka ekhatsi labatsintsekako njengebothishela, bafundzi, batali, bacwaningi betetheknoloji kanye nebaholi bemiphakatsi kulenchubo yekuhlela kucinisekisa kutsi emathulusi kanye netindlela te-digital letisetjentiswako tihlangabetana netidzingo tabo bonkhe basebentisi. Lendlela lehlanganisako ingaholela kumasu ekufundzisa lasebenta kancono futsi lasebentiseka malula.

Lucwaningo luveta insweleko lenkhulu yabososayensi bebuhlakani lobungekhatsi kanye nebafundzi bemishini, baphatsi jikelele kanye, nebacambi be-software kanye nebahlatiyi, bososayensi labafundze ngalolulwimi lwesintfu kute tinkhundle tekuchumana nato tikwati kusebentisa tinsita noma emathulisi lacanjwe ngalo lulwimi lweSiswati. Loku kungasita nasekutfutukiseni lulwimi ngobe phela lutawusetjentiswa nanoma kukhangiswa, kutsengiwa.

Kwesekelwa kwetilwimi tendzawo

Kusekelwa kwetilwimi tendzawo njengalo lolulwimi lweSiswati kuyenteka kutsi letinye tifundvo betigcile ekuhlanganiseni tilwimi tendzawo etintfweni tekufundza tilwimi letitfutukisiwe tebucwepheshe. Kufaka tilwimi tendzabuko ematheksthini ekufundza kungakhulisa kuhlanganyela kanye nekubaluleka kwalabo labafundzako Kusentjetiswa kwema -Online Language Learning Platforms kanye netinsita letifana nemakilasi lasebentako, emawebhusayithi ekufundza tilwimi lasebentako, kanye netinhlelo tekufundzisa tisetjentiswe kakhulu ekufundziseni tilwimi e-Afrika, nato letinhlelo tiniketa indlela legucugucukako yekuhlela tifundvo futsi tingafinyelela bantfu labanyenti (Arvanitis, 2019).

(Cakrawati, 2017: 22) Ukubeke kwacaca Lucwaningo lolusha luyasho kutsi Kuceceshwa kanye nekwesekelwa kwebafundzisi, Kuhlanguaniswa kahle kwetheknoloji ekufundziseni tilwimi kudzinga kuceceshwa lokwenele kanye nekusekelwa kwebafundzisi Tindhlelo tekutfutukiswa kwemsebenti letihlose kutfutukisa lwati lwetindhlelo te-digital kanye nemakhono ekufundzisa kusebentisa itheknoloji kungaholela emiphumeleni lemihle yekufundza. Tindlela Tekufundza Letihlanguanisiwe, Kuhlanguaniswa kwekufundziswa kwasekilasini lokujwayelekile kanye nemitfombolusito ye-inthanethi kanye nemathulusi ebuchwephesha kutfolakale kusebenta ekufundziseni tilwimi. Lendlela ingasombulula letinye tinkinga tekufundza ku-inthanethi ngalokuphelele futsi ivumelane netindlela letehlukene tekufundza.

Tindzaba tekutiphatsa

Tintfo letiphatselene nemikhuba lemihle tiyincenye lebalulekile yelucwaningo. Lomklamo uhlanganisa umsebenti webafundzi kanye nebafundzisi baseNyuvesi yaseMpumalanga. Umcwaningi uwlandzele umgomo wekucwaninga lofaka ekhatsi kusebentisa emadokhumenti. Wonkhe emadokhumenti lahloliwe lashicilelwe, ahlonishiwe ngekufakwa ehlwini lwemitfombo lesetjentisiwe. Bafundzi kanye nebafundzisi kanye nebacwaningi abakafakwa ku nkhumo luphenyo kepha kusetjentiswe imisebenti yabo. Imisebenti lehloliwe, yebafundzi labacalako, bemyaka wesibili,newsitsatfu labafundziswa ngumcwaningi, Bafundzi basenyuvesi bacala kufundzisa; ngako-ke, lolucwalingo beluhambisana nemigomo yelisiko le-Nyuvesi. Njengobe lesifundvo sitawubukana nemfundzisi losaceceshwa, inyuvesi yatfola sicelo semcwaningi sekwemukelwa ngekwemtsetfo. Ngesikhatsi ahlela futsi enta lolucwaningo, lomcwaningi wacabanga ngetindzima tebulili, buve, likhono, budzala, kutiphatsa ngekwelicansi, lulwimi kanye naleminyane mehluko. Kuphindze kucinisekise kutsi lucwaningo lwentiwa ngekwetsembeka nangekuhlonipha kwehlukahlukana ngekwemasiko kanye nemalungelo eluntfu. Umtsetfo wekuVikelwa

kweLwati lweBantfu (Protection of Personal Information Act 4 of 2023) (noma i-POPI Act) lovikela imininingwane yakho, ucale kusebenta mhlaka 1 Kholwane 2021. Tonkhe tintfo letenteka kubantfu labatsintsekako, tinkholelo tabo kanye nemikhuba yabo kutawucatjangelwa yi (POPIA).

Ligama lalesikhungo lapho lucwalingo lutawentiwa khona belingeke likhonjwe ngalokucacile. Ligama layo lelisemtsetfweni litawubitwa ngekutsi “ngulenyeyetikhungo temfundvo lephakeme eNingizimu Afrika”.

9. Umkhawulo walolucwaningo

Imikhawulo yimikhawulo umbhali nobe umcwaningi latibekele yona ngekutitsandzela. Kute kucinisekiswa kutsi umgomo walolucwaningo uyafezeka, imincele iyimicondvo lesungulwe ngumcwaningi njengemikhawulo nobe imincele. Lomunye angaphikisana ngekutsi umcwaningi ulawula kuhlukaniswa, lokuvame kuhambisana neluhlaka lwetifundvo, imigomo, imibuto yelucwaningo, kanye nebukhulu besampuli. Lokuncunywa akusiko lokuhle nobe lokubi; kunaloko, kuchaza ngalokuphelele kutsi tichaza njani futsi ngani tintfo letisisekelo telucwalingo mayelana nekwakhiwa kanye nesakhiwo (Claasen, 2024:24). Lolucwaningo lwentiwe enyuvesi yasemaphandleni eNingizimu Afrika. Lolucwaningo luchutjwe kuLitiko Letemfundvo lapho khona kucecshwa bafundzi labasacecshelwa kuba bafundzisi kwenteka esigabeni seSisekelo. Sigaba sekusungula sigcile kuphela kuBanga R-3 lapho khona sisekelo sekufundzisa nekufundza kufundza Siswati kumele sigcizelelwe uma kulungiselelwa labafundzako ngelikusasa. Bafundzi abakafakwa kunkhulumo luphenyo kepha kubukwe umsebenti lebawenta imihla nemalanga. Bafundzi labangekho kulesikhungo bashiyelwe ngaphandle ngobe Lucwaningo belitawendlaleka lungalawuleki naluhlaliywa.

10. Tincomo

Tikhungo letisetulu tekufundza kumele tivele nelicebo lekufundzisa Tilwimi taseNingizimu Afrika ngebucwepheshe ngemphumelelo. Lisu leliphawulwako kumele liphefumulelwe futsi licinisekiswa ngetinselele letinyenti letitsintsa bafundzi ngetindlela letehlukene, ngekuya ngetimo tabo.

Kumele kutsi kudluliselwe lomtfwalo kitsi tsine tikhulumi nebasebentisi betilwimi letistintsekako noma letisahamba ngelunyawo lwelunwabu ekufundziseni nasekufundzeni kusettjentiswa tinsita te inthanethi.

Tsine banikati baletilwimi ngitsi lekumele sititfufukisele lona sibe sichubeka silikhuluma angeke sitfufukise lulwimi lesingeke silusebentise, akube yinhloso yalolikhulumako lulwimi kwekutsi alusebentise nasetinkhundleni tekuchumana. banikati belulwimi ngibo la balusabalalisako etinkhundleni tekuchumana , balusebentise babuye bachumane ngalo.

Kusebentisa lelulwimi LweSiswati akube nemtselela wekuvula ematfuba emsebenti, kutiphilisa netenhlalakahle.

Lulwimi alube yindlela yekutiphilisa libuye lisebente kutsi kube khona kuhwebelana ngalo.

Tinhlangano letitimele nato atinikwe litfuba lekusabalalisa lulwimi lwaseNingizimu Afrika entindzaweni tema-Inthanethi lokululwimi lweSiswati.

Umbuso lwaseNingizimu Afrika ne-Afrika jikelele uphoselwa inselele lenkhulu yekutsi ifake timali tekutfufukiswa kwaletilwimi tesintfu kute tikwati kutfolakala etinkhundleni te dijithali futsi tikwati kusita kufundza nekufunzisa.

11. Siphetfo

Kwekugcina, kufundziswa kwetilwimi taseNingizimu-Afrika ngebuchepheshe besimanje nekubakhonakwato kwato ku-inthanethi, kubukwe kakhulu lulwimi lwe Siswati njengobe bekungulo lulwimi lekucondvwe kulo kulolucwaningo, kuyacinisekisa kwekutsi kubalulekile kakhulu ekutfufukiseni nasekusebentiseni Tilwimi taseNingizimu-Afrika ekufundzeni nasekufundziseni. Nanome tikhona tingcinamba letisekhona lekufaka ekhatsi kungatfolakali kwetinsita letanele nekwesekelwa kwetifundvo letifaka bucwepheshe, kuyabonakala kutsi loko lesekuhona kuyabasita bafundzi kwekutsi bafinyelele ekutfoleni lwati kuto tinkhundla te dijitali. Kuvetiwe kulolucwaningo kwekutsi kubalulekile kwekutsi bafundzi balutfole lucesho lolwanele nge bucwepheshe ngobe ematfuba lamakhulu latfolakalako kufaka ekhatsi kutfufukiswa kwe-corpus yavelonkhe, kuanjiswa kwesofthiwe yemitfombo levulekile njenge-Wikipedia, WordNet kanye kusetjentiswa kwemathulusi ebucwepheshe ekusiteni kufundzisa nekufundza tilwimi. Kutfolakala kwetindzaba ngetilwimi lwaseNingizimu Afrika ku-inthanethi kuyavuleka nematfuba lamanyenti ekusebenta. Lolocwaningo luvete kwekutsi kumele kucashelwe kakhulu indzima ledlalwa bucwepheshe ekutfufukiseni nasekulondvoloteni tilwimi tase-Afrika, nangetulu kwetinsayeya letichubekako letifana nekulinganiselwa kwesakhiwonchanti kanye nesidzingo se-digital content lesetjentiswe endzaweni letsite.

Kumcoka futsi kwemukela lulwimi nekutfutukisa tilwimi tase-Ningizimu Afrika njengobe iniketa kuvisisa kabanti tinkinga telulwimi endzaweni letsite, ngekwenta njalo kuniketa litfuba lekuhlolwa nekwakhiwa kwemibono tincomo kanye netindlela tekusebentisa. Lokunye kutawenta kutsi tonkhe tilwimi tase-Ningizimu Afrika tingashabalali futsi sitame kutsi asitsi silutfutukisa sibe silusebentisa. Lokunye lekwenza kufundziswa kwetilwimi temdzabu ngendlwla yebucwepheshe kutawent kutsi tilwimi tilondvoloteke futsi tikhule ngobe titawube tihambisana netingucuko tetimboni te sine (Fourth Industrial Revolution), Lolucwaningo lutawuba Lusito kakhulu kumiphakatsi yase Afrika, ikakhulukati tilwimi lebetikadze tibandlululwa.

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