

APPENDIX

Appendix A – Student Surveys

Age (enter digits only) *

Your answer _____

Grade (enter digits only) *

Your answer _____

What is your home language? *

- English
- isiZulu
- Other

How many years of experience do you have with isiZulu? *

- Less than a year.
- Between one and three years.
- More than three years.

What was your most recent grade obtained for isiZulu (term mark or year mark)? *

- Below 50%
- Between 50% and 70%
- Between 70% and 80%
- Above 80%

How often do you take electronic assessments (i.e. a test or exercise via a computer)? *

- I've never taken an electronic assessment before
- I occasionally take electronic assessments
- I regularly take electronic assessments

A1) The initial Google Form survey completed by the students

Were both of these exercises easier or more difficult than previous isiZulu exercises that you have done? *

- These were easier
- These were more difficult

Did you find either of the exercises more difficult than the other? *

- Exercise 1 was more difficult
- Exercise 2 was more difficult
- They were roughly the same

Which exercise did you prefer? *

- Exercise 1
- Exercise 2
- Neither

Explain your answer above. *

Your answer _____

How would you rate exercise 1 (based on the given options)? *

- Fair
- Unfair

How would you rate exercise 2 (based on the given options)? *

- Fair
- Unfair

What grade do you think you obtained for exercise 1? *

- Below 50%
- Between 50 and 70%
- Above 70%

What grade do you think you obtained for exercise 2? *

- Below 50%
- Between 50 and 70%
- Above 70%

Are there any other comments you wish to share regarding the exercises?

Your answer _____

A2) The questions required by the students to answer in the final survey

Appendix B – Experiment Exercises

Bloom's Exercise:

- 1) Type: 4, mnandi ukukhuluma nawe kube , Difficulty is: 12.0, Bloom: Evaluation
- 2) Type: 3, Umfundi ufunda isiZulu , Difficulty is: 9.0, Bloom: Analysis
- 3) Type: 3, Umuntu ucela usizo , Difficulty is: 9.0, Bloom: Analysis
- 4) Type: 3, Ugogo uqoba inyama , Difficulty is: 8.0, Bloom: Analysis
- 5) Type: 3, Imbali iyabiza , Difficulty is: 8.0, Bloom: Analysis
- 6) Type: 1, Umfowethu bayaphuza , Difficulty is: 5.0, Bloom: Comprehension
- 7) Type: 1, Umama bayadla , Difficulty is: 5.0, Bloom: Comprehension
- 8) Type: 1, Umuthi iyababa , Difficulty is: 5.0, Bloom: Comprehension
- 9) Type: 2, Abazali uyasiza , Difficulty is: 4.0, Bloom: Comprehension
- 10) Type: 2, Othisha uyafundisa , Difficulty is: 4.0, Bloom: Comprehension

Standard Exercise:

- 1) Type: 4, mnandi ukukhuluma nawe kube , Difficulty is: 12.0, Bloom: Evaluation
- 2) Type: 3, Umfundi ufunda isiZulu , Difficulty is: 9.0, Bloom: Analysis
- 3) Type: 3, Umuntu ucela usizo , Difficulty is: 9.0, Bloom: Analysis
- 4) Type: 4, ikhemisi eliseduzane likuphi , Difficulty is: 9.0, Bloom: Evaluation
- 5) Type: 4, oluhle ube nohambo , Difficulty is: 9.0, Bloom: Evaluation
- 6) Type: 4, ekhaya ngahamba kunini , Difficulty is: 9.0, Bloom: Evaluation
- 7) Type: 4, ngakho konke sengingazikholisa , Difficulty is: 9.0, Bloom: Evaluation
- 8) Type: 3, Ugogo uqoba inyama , Difficulty is: 8.0, Bloom: Analysis
- 9) Type: 3, Imbali iyabiza , Difficulty is: 8.0, Bloom: Analysis
- 10) Type: 3, Imvubu ithanda amanzi , Difficulty is: 8.0, Bloom: Analysis

Appendix C – Question Sample Pool for Experiments

Type, Sentence, Command, Answer (format questions are stored in the text file with and are read from)

- 1,Umfowethu bayaphuza_v,Identify_v the change needed to make the noun a plural and rewrite_v the sentence with this change.,Abafowethu_n bayaphuza_v
- 2,Abazali uyasiza_v,Identify_v the change needed to make the verb pluralized and rewrite_v the sentence with this change.,Abazali_n bayasiza_v
- 3,Umfundi_n ufunda_v isiZulu,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Abafundi_n bafunda_v isiZulu_n
- 3,Umntu_n ucela_v usizo,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Abantu_n bacela_v usizo_n
- 1,Umama_n bayadla_v,Identify_v the change needed to make the noun a plural and rewrite_v the sentence with this change.,Omama_n bayadla_v
- 2,Othisha_n uyafundisa_v,Identify_v the change needed to make the verb pluralized and rewrite_v the sentence with this change.,Othisha_n bayafundisa_v
- 3,Ugogo_n uqoba_v inyama_n,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Ogogo_n baqoba_v inyama_n
- 1,UNokuthula_n bageza_v izitsha_n,Identify_v the change needed to make the noun a plural and rewrite_v the sentence with this change.,ONokuthula_n bageza_v izitsha_n
- 1,Umuthi_n iyababa_v,Identify_v the change needed to make the noun a plural and rewrite_v the sentence with this change.,Imithi_n iyababa_v
- 2,Imithi_n uyakhula_v,Identify_v the change needed to make the verb pluralized and rewrite_v the sentence with this change.,Imithi_n iyakhula_v
- 3,Umndeni_n uhlala_v etafuleni_n,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Imindeni_n ihlala_v etafuleni_n
- 3,Umuzi_n uyasha_v,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Imizi_n iyasha_v
- 1,Ihlo_n abuhlungu_v,Identify_v the change needed to make the noun a plural and rewrite_v the sentence with this change.,Amehlo_n abuhlungu_v
- 2,Amahhashi_n liyagijima_v,Identify_v the change needed to make the verb pluralized and rewrite_v the sentence with this change.,Amahhashi_n ayagijima_v
- 3,Ikati_n liphuza_v ubisi_n,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Amakati_n aphuza_v ubisi_n
- 3,Iphoyisa_n lisebenza_v eGoli_n,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Amaphoyisa_n asebenza_v eGoli_n
- 1,Isiguli_n ziyagula_v,Identify_v the change needed to make the noun a plural and rewrite_v the sentence with this change.,Iziguli_n ziyagula_v
- 2,Izigebengu_n siyabaleka_v,Identify_v the change needed to make the verb pluralized and rewrite_v the sentence with this change.,Izigebengu_n ziyabaleka_v
- 3,Isitshulu_n simnandi_v,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Izitshulu_n zimnandi_v
- 1,Isigwili_n zifika_v ngempelasonto_n,Identify_v the change needed to make the noun a plural and rewrite_v the sentence with this change.,Izigwili_n zifika_v ngempelasonto_v
- 1,Inkomo_n zidla_v utshani_n,Identify_v the change needed to make the noun a plural and rewrite_v the sentence with this change.,Izinkomo_n zidla_v utshani_n
- 2,Izingane_n idlala_v ibhola_n,Identify_v the change needed to make the verb pluralized and rewrite_v the sentence with this change.,Izingane_n zidlala_v ibhola_n
- 3,Imbali_n iyabiza_v,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Izimbali_n ziyabiza_v
- 3,Imvubu_n ithanda_v amanzi_n,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Izimvubu_n zithanda_v amanzi_n
- 1,Inkosi_n abiza_v imbizo_n,Identify_v the change needed to make the noun a plural and rewrite_v the sentence with this change.,Amakhosi_n abiza_v imbizo_n
- 2,Amakhosikazi_n idla_v amasi_n,Identify_v the change needed to make the verb pluralized and rewrite_v the sentence with this change.,Amakhosikazi_n adla_v amasi_n
- 3,Indoda_n isebenza_v eGoli_v,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Amadoda_n asebenza_v eGoli_n
- 3,Inkonyane_n iyancela_v,Analyze_v and rewrite_v the sentence so that the noun and verb are plural.,Amankonyane_n ayancela_v
- 1,Ucingo_n ziyakhala_v,Identify_v the change needed to make the noun a plural and rewrite_v the sentence with this change.,Izingcingo_n ziyakhala_v
- 2,Izimpondo_n luyahlaba_v,Identify_v the change needed to make the verb pluralized and rewrite_v the sentence with this change.,Izimpondo_n ziyahlaba_v
- 4,mnandi_a ukukhuluma_v nawe_adv kube_conj,Rearrange_v the given words so that the sentence is grammatically and semantically correct.,kuba_conj mnandi_a ukukhuluma_v nawe_adv
- 4,ikhemisi_n eliseduzane_a likuphi_adv,Rearrange_v the given words so that the sentence is grammatically and semantically correct.,likuphi_adv ikhemisi_n eliseduzane_a
- 4,oluhle_a ube_v nohambo_n,Rearrange_v the given words so that the sentence is grammatically and semantically correct.,Ube_v nohambo_n oluhle_a
- 4,ekhaya_n ngahamba_v kunini_adv,Rearrange_v the given words so that the sentence is grammatically and semantically correct.,kunini_adv ngahamba_v ekhaya_n
- 4,ngakho_adv konke_n sengingazikholisa_v,Rearrange_v the given words so that the sentence is grammatically and semantically correct.,sengingazikholisa_v ngakho_adv konke_n

Appendix D – Action Keywords for Bloom’s Taxonomy [8]

Level	Keywords
Knowledge	define describe name state match select locate quote recall reproduce copy duplicate
Comprehension	Explain paraphrase summarize discuss convert identify translate rewrite transform
Application	solve apply modify change complete construct manipulate
Analysis	analyze classify contrast separate categorize differentiate order
Synthesis	evaluate compare discriminate recommend assess choose defend measure debate justify
Evaluation	design compose create combine formulate substitute develop rearrange adapt assemble arrange