Short Report

Students' perceptions on using an isiZulu web-based learning tool to improve communication skills in an MB ChB programme

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Background. African language teaching and learning is critical in a healthcare context to enhance effective doctor-patient communication. In this context, the University of KwaZulu-Natal recognises the importance of proficiency in isiZulu and has been a forerunner in developing isiZulu within the health sciences setting. This pilot study reports on students' perceptions of using an isiZulu web-based learning tool to improve communication skills in an MBChB programme.

Objective. To assess students' perceptions of an innovative web-based learning tool to improve isiZulu communication skills. Specifically, the study evaluated participants' language proficiency, technological needs and experiences using the isiZulu website as a language teaching and learning tool.

Method. In this mixed methods study, data from an online questionnaire via Google Forms was used to ascertain participants' perceptions of the isiZulu web-based learning tool. We recruited 19.5% of the MB ChB undergraduate student population for participation in this study. The data were analysed for emergent themes and to make recommendations for improving the web tool.

Results. The overall feedback regarding the website was positive. Recommendations for the tool included developing more learning activities and refining specific technical aspects of the website.

Conclusion. Communicating safely and effectively with isiZulu patients is critical to avoid miscommunication. While the study findings showed that the website proved an excellent tool for improving isiZulu communication skills and interacting with the learning content, further research related to the tool and enhancing isiZulu clinical communication skills is warranted.

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Communicating safely and effectively with an African patient requires knowledge of the patient's language and culture, and the ability to communicate proficiently in the patient's language. However, attaining proficiency in an indigenous South African language, such as isiZulu or other Nguni languages, poses a challenge for young medical students in training.[1] Hence, teaching and learning an African language is essential to a health sciences curriculum in South Africa (SA). While various SA medical schools have integrated an African language within the health sciences curriculum,[2-4] there is still limited research on improving and sustaining efficient and effective isiZulu or African language communication skills throughout the MB ChB degree.

Language barriers and communication breakdowns are ongoing global challenges faced by healthcare professionals. International studies have reported that such issues severely impact doctor-patient communication, resulting in poor patient communication, potential misunderstandings with dangerous consequences, patient dissatisfaction and delayed service delivery.[5-7] In SA, studies have reported students' lack of confidence and poor clinical communication skills when speaking to Nguni/Black patients in a SA healthcare context.[2,8]

IsiZulu is the predominant spoken language in KwaZulu-Natal, with 62% of the population being isiZulu mother-tongue speakers.[9] Given these statistics and under the guidelines of the University of KwaZulu Natal (UKZN) Language Policy and Plan,[10] the College of Health Sciences, UKZN, offers a mandatory year-long, eight-credit isiZulu module in the Year 1 MB ChB curriculum. Non-isiZulu-speaking students who have failed the proficiency test are enrolled for this module. Adopting a communicative approach to second language (L2) teaching, the module provides students with the basic vocabulary and grammar needed to communicate with patients.[11] The Years 2 and 3 MBChB curriculum lack any progression in isiZulu teaching. Studies have reported the need for further isiZulu integration and students' language challenges during clinical hospital rotations.[2,12] In response to these language challenges, isiZulu communication videos based on clinical communication skills were introduced in Years 2 and 3.[12] History-taking isiZulu stations were also implemented in objective structured clinical examinations (OSCEs) in Years 2 and 3. These sessions involve face-to-face interviews with an isiZulu mother-tongue simulated patient based on a clinical respiratory or other scenario.

The isiZulu communication video project has proved beneficial in the preclinical years (i.e., Years 2 - 3) of the curriculum.[12] However, during the clinical years of study (i.e. Years 4 - 6), students have forgotten certain foundational skills acquired in the preclinical years. Studies reported that students could not interview older rural patients in their indigenous language during clinic and hospital rotations.[13] Given the overburdened curriculum, an additional isiZulu module is not feasible to implement within the 6-year MBChB degree. Therefore, it is vital to integrate isiZulu within the health sciences curriculum to enhance clinical communication in the clinical years.[1] Hence, the idea of creating a web-based tool was borne, to foster isiZulu clinical communication for students to access and engage with clinical content. Given the lack of medical isiZulu-specific

websites, such a tool offers authentic listening and reading tasks and intends to motivate students to sustain their learning of isiZulu.

Drawing on a blended learning framework proposed by Mizza and Rubio,[14] this project aims to sustain isiZulu learning and foster autonomous learning throughout the MB ChB programme. Through the blended language learning approach, students can interact with the content ubiquitously. The content available through the e-learning platform can be updated continuously and is designed interactively over the 6-year MB ChB programme. In addition, the learning material and resources are based on theoretically grounded L2 principles to enhance students' isiZulu clinical communication skills and advance isiZulu teaching and learning within the health sciences curriculum.[3,11,14]

Considering the users' language and technological needs in developing such an intervention is vital. Good website design should be based on the users' language and technology needs.[15] Hence, the content of the tool is based on the language and technological needs of MB ChB students who completed the Year 1 isiZulu module. The website design is also based on two fundamental L2 teaching principles. Language learning should prepare students for real-life/working-life situations. Mastering grammar and vocabulary is not the ultimate goal, but language should be seen as a tool that enables students to perform real-life tasks, engage in meaningful conversations or conduct meaningful and safe consultations.[14] This tool is based on the Calgary Cambridge framework for successful doctor-patient interviews.[16]

The general aim of this study was to explore students' perceptions of an innovative approach using a web-based learning tool to improve isiZulu clinical communication skills in an MB ChB programme. Specific objectives focus on students' language and technological needs and experience using the isiZulu website as a language teaching and learning tool.

The isiZulu web-based learning tool

The web-learning tool is a work-in-progress project involving collaborative work between individuals, each bringing along with them their expertise in creating the website. The design team comprised medical students, translators, clinical skills lecturers, external clinical reviewers, L2 isiZulu specialists and IT specialists.

The web tool is still under development and the medical content described in this study is part of the pilot study—the refresher course. Hence, the website has not yet migrated to UKZN's online learning platform, Moodle. The content is unidirectional and the purpose of this prototype is to allow students to interact with the content taught in Year 1.

Two medical students created the website using the WordPress platform due to its simplicity and ease of maintenance. Before development, a functional schematic was drawn up to guide the development process. The website consists of two main sections: a revision section (or refresher course) and a section containing content for each year, from the second to the sixth. Given that the website aims to assist medical students in isiZulu communication in the medical field, a hospital theme was incorporated into the design. The design layout included a hospital entrance (Fig. 1.), reception (Fig. 2.), and a lift and ward floor plan.

Upon clicking 'Nesi Bhengu', the user enters the refresher course page, a quick revision of the basic aspects of isiZulu taught in the first-year module (Fig. 3.). The refresher course has different components and a button that takes the user to the lift, which is the portal to content aimed to address the needs of subsequent years.

The content from the Year 1 MB ChB isiZulu curriculum was accumulated for the isiZulu website. Each component comprised three fundamental elements: an isiZulu and English translation and grammatical explanations, an image and an audio file for correct pronunciation (Fig. 4). Images and

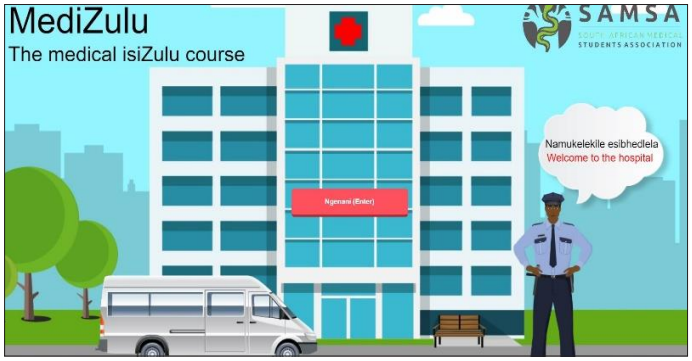

Fig. 1. Front landing page.

Fig. 2. Reception page.

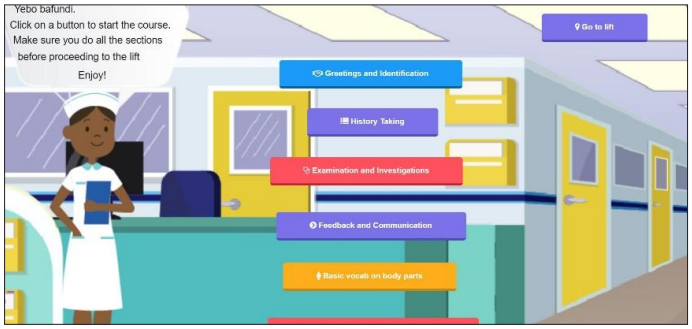

Fig. 3. Refresher course.

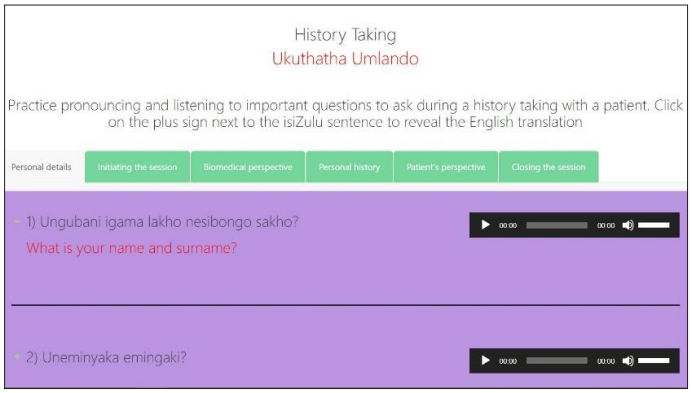

Fig. 4. History taking page.

animation were included throughout the website to provide an interactive experience for students. Activities, such as multiple-choice questions, matching and crossword puzzles based on the content were developed using open-source content collaboration frameworks and plug-ins. The website structure was adopted from the Calgary Cambridge Guide[16] for doctor-patient interviews.

Methods

Research design

The research instrument was an online Google Forms questionnaire comprising 32 statements divided into two parts. Questions in Part 1 elicited responses relating to students' language and technological needs. Part 2 of the survey was based on students' website experiences. Questions included multiple-choice questions, Likert rating scales and open-ended questions. The study focused specifically on students' experiences with using the web tool hence biographical data were omitted. The link to the website was available on the Google Forms questionnaire.

Participants

Purposive sampling was employed in this pilot study to recruit registered MB ChB students who completed the CMED1ZUM0 isiZulu module in Year 1. The total number of L2 students registered for the module in their first year was 60 in 2016, 55 in 2017, 72 in 2018, 80 in 2019 and 71 in 2020. In essence, students in years 2 - 4 were invited to participate in the study and not the first years. The total percentage response rate was 19.5%.

Data collection

The questionnaire was administered on the Moodle learning management system. Weekly email reminders were sent on the MBChB class WhatsApp group chats. Participation in the study was optional. There were no repercussions for non-participation. Submissions were anonymous hence no demographic information was provided.

Data analysis

The data were analysed using the generated Google Forms information to identify emergent themes and provide recommendations for improving the web tool.

Ethical considerations

Ethics clearance to conduct this study was granted by the UKZN Humanities and Social Sciences Research Ethics Committee (ref. no. HSSREC/00002781/2021). Permission was obtained from all relevant gatekeepers and individual consent was given by participating students.

Results and Discussion

The study's main aim was to ascertain students' perceptions of using an isiZulu web-based learning tool. This section presents the results according to the following emerging themes:

1. isiZulu proficiency,
2. the design of the website and
3. interacting and engaging with and learning from the isiZulu medical content.

IsiZulu proficiency

Being proficient in isiZulu during the clinical years is a vital skill. Participants' perception of their isiZulu proficiency levels showed that 40.9% rated this as poor, while 36.4% reported a fair level of isiZulu proficiency. Understanding isiZulu at a basic level is a good start. However, more language input is essential during the clinical years. This is a concern as a year-long module does not prepare students for isiZulu clinical communication.[1] Poor isiZulu proficiency skills could be attributed to students' lack of clinical communication skills and the confidence to communicate with isiZulu-speaking patients.[1,8] Given that 40.9% of participants rated their isiZulu proficiency as poor, continued language input is vital. Therefore, the development of the isiZulu web-based learning tool caters to the language and technological needs of participants.[14]

The design of the website

In designing a web-based tool for students, it is essential to incorporate their feedback as they are the front-end users. The website design results were based on three key features: colour scheme, images and navigation (Fig. 5). The data was obtained using a 10-point Likert scale, with ratings from 1 - 10, with 1 = underachievement and 10 = overachievement. An aggregated favourable response of 71.2% of participants indicated that the website design was good. Similarly, an aggregated 77.3% of participants reported the colour scheme as good. Almost all (98.5%) participants indicated that the images were applicable and the photos were relevant to the content. Navigating through a large amount of content on a website is an essential feature to consider in web design. An aggregated 60.7% of participants reported that navigability through the website was good. Encouragingly, participants were optimistic about the web design. The critical components of web design can encourage and motivate further autonomous learning.[14,15]

Interacting and engaging with and learning from the isiZulu medical content

In addition to a user-friendly website, developing an online tool should enhance the development of language learning.[14,15] One of the critical factors of online language learning is creating an engaging and interactive learning platform.[14] The data for this component was calculated using a 5-point Likert scale, with 1 = low interaction levels and 5 = high interaction levels. Levels 4 and 5 figures were aggregated to depict much interaction and very high interaction, respectively. Most (83.4%) participants reported high engagement and interaction with the website. While most students interacted with the isiZulu medical content, a small number of participants (4.5%) reported low engagement levels. Nevertheless, the positive participant response is encouraging for the content and web designers. An interactive learning tool provides students with an opportunity for better retention of the content and vocabulary. The interaction between the student and learning activities as well as the content could serve as motivation for students to return to the website, fostering continued autonomous learning throughout their clinical years of study.[14]

Data extracted from the open-ended questions ('Did you face any challenges' and 'Please add any comment/s that you think will be relevant to this project') are discussed below. Data extracted from the open-ended questions were analysed as follows. Operational challenges experienced by participants while using the web-based learning tool included poor connectivity, technical glitches and slow website loading. Relating to the content, participants reported that isiZulu was challenging to learn on an online platform. Certain topics and levels of study were not yet accommodated on the website. However, participants appreciated the initiative and the well-structured website, as one participant commented the following:

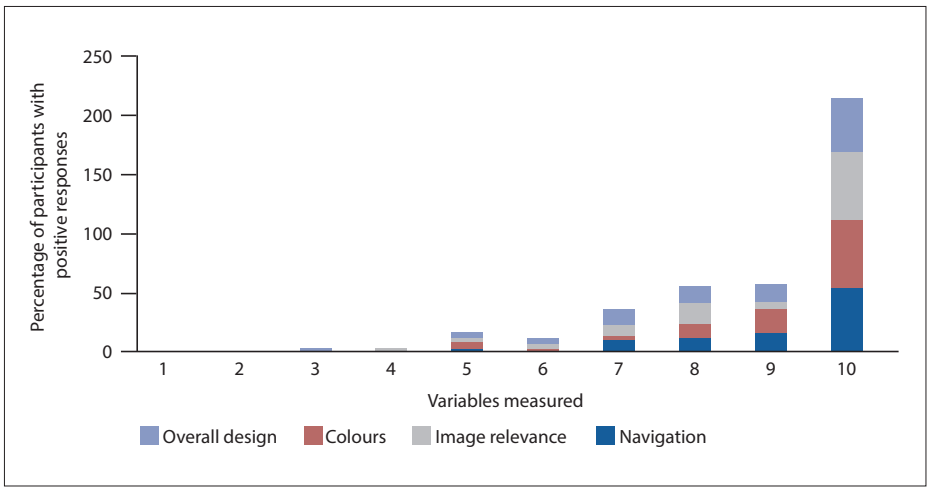

Fig. 5. Participants' views on overall web design, colours, image relevance and ease of navigation.

'The website has helped alleviate so much stress I have experienced surrounding isiZulu as a third-year student. It is perfect to refresh my knowledge and learn new things…. this is an innovative and excellent idea. Thank you!'

Based on the student's perception above, the innovation of a web-based learning tool is a much-needed resource for improving isiZulu clinical communication. Given the lack of medical isiZulu-specific online tools, this website has the potential to become a powerful learning resource that students can access ubiquitously.

Recommendations

The necessity for further integration of isiZulu throughout the 6-year MBChB programme is crucial and has been emphasised in similar studies.[1,2,12] Given that this is a pilot study of the refresher course, an evaluation of the design of the website and the isiZulu medical content is essential. Technical recommendations included eliminating technical glitches, ease of access to the website, avoiding cookies and animation, smooth transition of webpages and more options on the home page. Website content recommendations included more activities and scenarios, the inclusion of simulated games and videos, an improved feedback system, audio opportunities and additional vocabulary and grammar.

Limitations of the study

This study was anonymous hence no demographic information was elicited. This is a limitation as biographical data could have been valuable. The study recruited only L2 isiZulu speakers who had failed a proficiency test in isiZulu. No focus group discussions or interviews were conducted. A face-to-face interview could have provided more in-depth responses. The online survey response rate was low, which may have been attributable to COVID-related issues and an overburdened workload.

Conclusion

Effective communication in the clinical setting is integral to patient care and teaching endemic languages in medical schools must be optimised to overcome language barriers. While the current teaching model is effective, the short duration of language modules, usually a year, hinders the progression of communication skills. Thus, innovative ideas like web-based interactive learning are a valuable adjunct to consider bridging the gaps.

While the study results showed that web-based learning makes it easier for most students to engage in continuous learning, it is necessary to consider the website's user-friendliness across different devices and to ensure that learning progress can be measured with outcomes.

Further research is warranted using a larger study sample to ascertain the website's impact on learning, with recommendations to re-administer the survey to a larger cohort of students after reviewing the data collection method to ensure optimum participation.

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Conflict of interest. None.

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