



Academic, keyword, and plain English subtitles for natural sciences students: Intralingual views



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The study is an analysis of the reaction of students in a faculty of natural and agricultural sciences (NAS) to subtitles and also includes an investigation of their responses thereto. Reception of and responses to academic English (close to verbatim transcription), plain English, and keyword English subtitles were explored by showing participants subtitled videos related to the content of their module. Participants were then asked to complete demographic and affective questionnaires, and participated in focus group interviews to investigate their reception of the various subtitles. The results show that participants responded particularly well to plain English subtitles. The focus group interviews indicated that they found all three sets of subtitles useful for note-taking purposes, adjusting the speed at which they accessed and processed information by pausing the videos, highlighting important information in the study materials, and being able to engage aurally and visually with the materials. From a higher education perspective, this emphasises students' readiness for subtitles as an academic mediation tool.

Contribution: This article aims to fill existing gaps in the fulfilment of higher education institutions' language policies, which have been exposed by the thrust for multilingualism in higher education. Research into academic subtitling as an academic mediation tool can be used to bridge this gap, thereby supporting innovative research in higher education.

Keywords: subtitles; plain English; inclusivity; reception; video learning; accessibility; higher education; academic mediation.

Introduction

As digital media becomes increasingly prevalent and widespread in leisure and education settings, concerns regarding the issue of language accessibility in various digital mediums have been highlighted. A common mode of improving accessibility of digital media is the use of subtitles. Interlingual and intralingual subtitles are the most common subtitling forms used in digital media. Interlingual subtitles refer to translated subtitles not in the same language as the spoken text in a video. In contrast, intralingual subtitles are 'a written rendition of spoken dialogues in the same language, for instance, the English subtitles of an English language programme' (Szarkowska, Díaz Cintas & Gerber-Morón 2020:661).

In a study on subtitle reception among natural and agricultural sciences (NAS) students at the University of Pretoria, several videos in the students' animal anatomy course included subtitles in the original (academic) English, plain English, and keyword subtitles. It is important to note that this group cannot be regarded as either demographically or academically representative of the student body. They were chosen based on the availability of existing discipline-specific video material in the specific course.

The subtitles used in this study were generally intralingual. This article explores students' reception of all English subtitles used in this study by considering access patterns, questionnaire responses, and focus group interviews. The study has a qualitative and quantitative focus on reception, which was not a focal point of the Kruger-Roux and Angu study. Google Analytics from the videos and the accompanying statistics are used to analyse the participants' access to the various subtitles. Participants' affective responses to the subtitles are investigated by analysing responses to a questionnaire on the usefulness of the subtitles and participation in focus group interviews.

At the start of the 2020 academic year, it was planned to use the subtitled videos on animal anatomy as additional material to the existing practical component of the module. However, in March 2020, South Africa was placed under national lockdown because of the coronavirus disease

2019 (COVID-19) pandemic (Republic of South Africa 2020a:1). This meant that academic activities that would normally occur on university campuses were subsequently suspended, and the subtitled videos used in this study were used as replacements for students' practical sessions instead of being merely a supplementary component. The subtitled videos, therefore, replaced the students' in-person practical sessions altogether, meaning that the videos and subtitles became an integral part of the module which formed the focus of this study.

Research into the usefulness of academic English, plain English, and keyword English educational subtitles is a novel contribution that has the potential to promote discourses about transformation in higher education. Researchers can gain knowledge about the best methods for bridging language barriers in academia by examining how various kinds of subtitles improve language accessibility and comprehension. Academic English subtitles can help students improve their language abilities and make it easier to participate in academic discourse (Lacroix 2012:148). Conversely, plain English subtitles can improve accessibility for students with diverse levels of language competency by simplifying technical terms and principles. Knowledge retention and retrieval can be facilitated by keyword English subtitles, which draw attention to important terms and ideas. Understanding the effects and advantages of these various subtitle types can allow higher education institutions to establish inclusive teaching methods, curricula, and language policies. Ultimately, by addressing linguistic obstacles and fostering fair access to knowledge and opportunities, this research adds to ongoing discussions and efforts around transformation in higher education.

Literature review

Initially, the driving force behind the promotion of multilingualism in education and government settings, was an interpretation of Section 6 of the Constitution of the Republic of South Africa (1996:4), which states that all official languages should be treated equally, as opposed to the privileged status previously held by English and Afrikaans (Olivier 2011:228). This may have been the catalyst for certain initiatives related to multilingualism in education. However, 15 years into the new democratic dispensation, previously dual-medium or Afrikaans universities started adopting English as their medium of instruction, leading to a demand for additional academic assistance in languages other than English from the classroom up to tertiary education level (Antia 2015:576; Benson 2018:218; Hungwe 2019:2; McNamee & Rule 2019:166). In 2016, the Department of Higher Education and Training (DHET) released a new draft language policy (promulgated in 2020) in which it stressed the responsibility of universities to be language-inclusive, as well as the fact that not much had been done in this regard over the past 20 years (Republic of South Africa 2020b). Therefore, plain English and keyword subtitles are strategies that may mediate barriers to language inclusivity in higher education.

Various studies have underlined the advantages of subtitled content in educational settings. Some of these advantages include the improvement of 'academic literacy levels ... [and] processing of information, [as well as students'] receptive abilities' (Lacroix 2012:50). However, as Lacroix (2012:50) rightly points out, the benefits of same-language subtitles (SLS) cannot be examined before examining why such mediations are necessary. The University of Pretoria's Language Policy (effective from 01 January 2022), specifically section 'Focus group responses', acknowledges that students require academic mediation regarding language and related barriers in academic contexts (University of Pretoria 2016). Academic content with SLS and plain English subtitling could be regarded as mediation. Part of the reason for the necessity of these mediations is low levels of English proficiency among South Africans.

According to Cummins (2001:67), language proficiency 'refers to the extent to which an individual has access to and command[s] the oral and written academic registers of schooling'. Low levels of English proficiency among South Africans begin in the education system's foundation phase, where learners often do not have access to the academic language they are instructed in at school, which means that they struggle to use academic language later on in their education. These low language proficiency levels (in English and other languages) then carry over into the secondary and tertiary education phases, as 'the typical practice in South African schools is to use the mother tongue through Grade 3 and then switch to English' (United Nations Children's Fund [UNICEF] 2016). This means that learners who do not have English as their home language (HL) experience confusion as they must adjust to the use of English after the foundation phase, while 'ironically, English and Afrikaans speakers continue to benefit from mother-tongue medium education as they did during the colonial and apartheid eras' (Heugh 2011:153).

Another contributory factor to these low language proficiency levels is 'the fact that the school-leaving examination [in South Africa] assesses the mastery of the school curriculum rather than readiness for the linguistic demands of university studies' (Van Rooy & Coetzee-Van Rooy 2015:33). Therefore, this language proficiency (or lack thereof) can negatively impact tertiary academic performance if not addressed through mediation methods (Lacroix 2012:43). If the Language Policy Framework for Public Higher Education Institutions (2020) and the University of Pretoria's language policy are to be adhered to, and language proficiency issues are addressed, a mediation method such as academic content with SLS and plain English subtitling potentially benefits students. This is especially true in cases where students also need to adjust to the differences between everyday spoken English and academic English in tertiary settings.

It is clear that, while historically some incorrect assumptions may have been made about the place of subtitling in multilingual education (such as that it would fill a void created by the constitutional obligation to promote

multilingualism) (Hlatshwayo & Siziba 2013:84), educational subtitling does have a role to play in practical terms to enhance retention and language acquisition for academic success.

Considering the factors that may necessitate mediations, such as subtitled academic material, the benefits of such mediation should be explored. The benefits of subtitled materials include: improved subject matter recollection, vocabulary expansion, and improved communication capacity (Danan 2004). 'However, Danan warns that, despite these benefits, educators should be vigilant and not ignore limitations. These may include 'visual input which is too far beyond the linguistic competency of the viewers [which] may yield poor language gains' (Danan, 2004:71). This is an important factor that presented a serious potential limitation to the present study, hence the use of plain English and keyword subtitles in addition to the verbatim academic English subtitles were investigated. The meaning of 'verbatim', in the context of this study, does not include natural-speech phenomena such as interruptions, incomplete sentences, and hesitation markers. It refers to full text of the content, as close as possible to the original phrasing with a somewhat simplified syntax, yet without reproducing syntactical errors, and within the constraints of the 70 characters subtitle limit.

To further determine the effectiveness of subtitles and their reception, this study reviewed research by Perego et al. (2016:219) in which one of the goals was to determine whether watching subtitled material was 'more challenging and less enjoyable for viewers who are not habitual users of subtitles' and 'whether subtitling offers greater benefits to those who are familiar with it'. This study found that viewing subtitled material was 'cognitively effective' and that viewers who engaged with the subtitled material showed good results when asked to demonstrate word-related skills after viewing the subtitled material (Perego et al. 2016:220). Perego et al. (2016:206) define cognitive effectivity as the ability to understand content. These results further demonstrate the benefits of subtitled material, and in an educational setting, Perego et al. (2016:220) recommend further research to determine whether these positive effects can be replicated in other specific target users. The current study aims to determine whether educational subtitles proved beneficial to students in a specific module in the University of Pretoria's NAS faculty, focussing on specific target users to build on the research conducted by Perego et al. (2016:220).

In terms of subtitle reception, Gambier (2018:55) raises the important issue of accessibility. Gambier highlights certain features of accessibility (which, in turn, influence viewer reception) that should be considered in both SLS and translated subtitles. These features include adherence to acceptable language criteria, legibility (concerning font choice, screen positioning and subtitle speed), readability (cognitive load), synchronism, and the relevance of the information displayed on the screen (Gambier 2018:55). Gambier (2018:57) further focuses on the 'three R's' of reception, namely response, reaction, and repercussion.

In terms of response, Gambier (2018:57) notes that much focus is generally given to questions of how 'attention [is] distributed between images and subtitles', whether subtitles are read one word at a time, whether audiences would rather avoid reading the subtitles on-screen, and whether they read a subtitled line more than once. Relating to reaction, Gambier (2018:57) asks whether the audience must assume any 'shared knowledge to allow efficient communication' and which possible interferences could occur while engaging with subtitled materials. Lastly, Gambier (2018:57) defines the concept of repercussion both in terms of viewers' preferences and attitudes, and the socio-cultural context of the viewers. These are all important aspects that were considered and discussed in the present study.

Finally, the results of a study conducted by Kruger-Roux and Angu (2020:70) found that subtitled learning materials are an effective educational tool for students' understanding 'of complex scientific terms because they assisted in improving participants' ability to identify and acquaint themselves with keywords used in the video'. The study also found that subtitled learning materials allow students to 'make use of implicit and explicit memory' because 'subtitles [assist participants] with both visual and auditory recognition' as a form of 'implicit and explicit' memory (Kruger-Roux & Angu 2020:71). Participants' reception of and responses to the subtitled materials in this study were generally positive, with the results and responses from participants suggesting that 'subtitles can enhance student comprehension of video content, retrieval and retention of information and vocabulary building, as well as developing critical reading and listening skills' (Kruger-Roux & Angu 2020:70). However, in a country like South Africa, where subtitles are not commonplace, viewers need to be prepared for subtitled materials by being shown explicit viewing strategies, as proposed by Danan (2004:74-75), albeit in a different setting. Kruger-Roux and Angu (2020:70) also recommend in-depth preparation of local student audiences to view and understand subtitled materials successfully. This finding prompted the present study and its approaches to student reception of subtitles, as mentioned in the introduction of this article.

Based on the literature discussed above, it is clear that there are many benefits related to presenting academic materials with subtitles, including enhanced communication, expansion of vocabulary and accessibility, memorisation and recall skills, and information retention (Kruger-Roux & Angu 2020:71).

Methodology

The present study used a mixed-method research methodology within a case study design to investigate the reception of subtitled, discipline-specific videos. Participants' cognition was tested through post-video questionnaires and comprehension tests. This means that both qualitative and quantitative data were gathered and analysed throughout the study.

The first objective of this study was to investigate student reception, that is, how participants received the subtitles in discipline-specific videos. By considering participant attitudes and perceptions, educational subtitles and the introduction thereof could be adapted to local student needs for greater effectiveness. This was addressed using a set of videos that had been subtitled from a module in the natural sciences relating to animal anatomy. Before viewing the subtitled learning material, participants were shown an instructional video explaining which subtitle sets were available and how to activate each set. They were also briefly informed of the benefits of using subtitled material. This was done to facilitate the viewing strategies and preparation for subtitled materials, as suggested by Danan (2004:74) and Kruger-Roux and Angu (2020:70). Each video included (among other HLs) the following sets of subtitles: academic register, plain English, and keywords. The viewing statistics of these videos were then assessed to see which subtitles the participants favoured to investigate their reception of the various types of subtitles. The subtitles were distinguished as follows:

- The academic English subtitles consisted of close to verbatim transcriptions of what was said in the videos while retaining discipline-specific terminology. In contrast, plain English subtitles 'translated' the academic English text into everyday English terms. The verbatim academic English subtitles followed the subtitled guidelines set out by Karamitroglou (1997:1). These guidelines include syntactical simplifications, such as preferring the passive voice to the active voice, positive expressions for negative expressions, and the like.
- The plain English subtitles followed guidelines as set out by Cutts (2020:xxvi–xxvii) and Blamires (2000:9–12). These guidelines overlap somewhat with Karamitroglou (1997:1), although they are more exhaustive and lexically prescriptive.
- The keyword subtitles contained only certain important terms the module's lecturer selected.

Once the videos were viewed, participants were asked to complete a demographic and affective questionnaire to outline their experience of the subtitled videos, indicating the perceived utility of the different types of subtitles.

Results were collected through post-video questionnaires as well as a post-video comprehension test. The following research questions were considered:

- *What is the students' reception of the various subtitle options that have been made available, and what do their usage statistics show about the subtitles they prefer most?*
- *How does student subtitle reception impact the decisions in educational subtitling, and how do they shape the conventions of educational subtitling?*
- *What effect does the register of these various subtitles have on the students' reception, academic performance and general literacy? How can these effects be measured?*

Ethical considerations

Participants in this study were made aware in writing that the results of the study, including personal details, will be anonymously processed into research reports. This has been done by assigning participant numbers instead of given names. Participants signed informed written consent forms indicating that they were participating willingly, that they had time to ask questions and had no objection to participate in the study. Participants were made aware that there is no penalty should they wish to discontinue participation in the study and their withdrawal would not affect any treatment in any way. This study was approved by the Research Ethics Committee of the Faculty of Humanities at the University of Pretoria (approval number 13062418 [HUM015/0121]).

Results

In this section, the participants' demographic information and viewership habits are discussed. In addition, the results of the questionnaires and focus group discussions based on participants' reception of the subtitled videos are also discussed.

Participant demographics

Because of South African university students' varied socio-cultural environments and the variety of official languages spoken in South Africa, the study had to identify possible extraneous variables. A set of possible extraneous variables was included in the questionnaires given to participants, as outlined in the section below. Among others, extraneous variables were used to compare the representativity of the participants to the university community as a whole.

According to the self-disclosed information taken from the questionnaire, 90.7% of the participants indicated that they were between the age of 19 and 22 years. In comparison, 8.14% indicated that they were older than 23 years, and only 1.16% indicated that they were younger than 18 years. This means that most of the participants fall within the same peer group.

Furthermore, when asked to specify their HL, 52.33% of the participants stated that their HL was Afrikaans, 33.72% indicated their HL as English, 5.81% said that their HL was Sepedi, 2.33% listed their HL as Sesotho, 2.33% as Xitsonga, 1.16% as isiXhosa, 1.16% as Setswana and 1.16% listed their HL as 'Other'. Therefore, the group of the participants was rather unevenly distributed in terms of their HL (see Figure 1).

When compared to the latest available HL data at the University of Pretoria (2014:5) as well as the participants in the study by Kruger-Roux and Angu (2020:71) at the University of X's Faculty of Health Sciences, it is also clear that the participants in the present study are not representative of the University as a whole in terms of their spoken HLs, as shown in Figure 1. Therefore, future studies could be conducted on more representative samples since the online pivot of educational materials because of COVID-19 is likely to have led to the creation of more discipline-specific visual material.

When asked how English as a subject was presented to them during grade 12, 44.19% of the participants indicated that English was taught at their school as a HL. In contrast, 55.81% said that English was taught as a first additional language (FAL). In terms of the participants' school performance in English, 34.88% of the participants indicated that they received a code 7 (80% – 100% or A) result for English in grade 12, while 51.16% received a code 6 (70% – 79% or B), and 13.95% received a code 5 (60% – 69% or C) (Umalusi 2013:n.p.). None of the participants received lower than a code 5. However, these results should be viewed with the added context that:

[T]he additional language curriculum in the National Senior Certificate pays lip service to abstract cognitive academic language skills [and that] too little emphasis is placed on cognitive academic language proficiency in the communicative approach to language teaching in schools, resulting in students arriving at university with poor writing skills. (Van Rooy & Coetzee-Van Rooy 2015:32)

The participants therefore received relatively high marks for English at school, which may have influenced the high self-evaluation of their English reading skills.

When asked to self-evaluate their English reading skills, 39.53% of the participants rated their skills as excellent, 59.30% rated their skills as good enough and only 1.16% of the participants indicated that they thought their skills were poor. Therefore, 98.83% of the respondents thought that their reading skills were sufficient for second-year university studies.

Van Rooy and Coetzee-Van Rooy (2015:32) attribute students' high self-evaluations in terms of their English

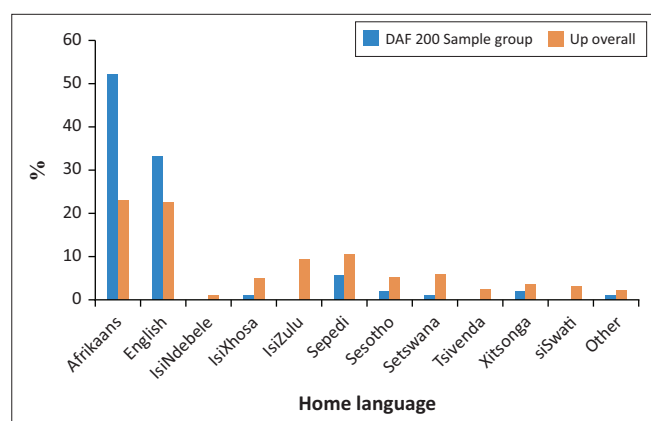


FIGURE 1: Participants' home language for the current study compared to the indicated home language of registered students at the University of Pretoria (2014).

TABLE 1: Participants' responses to statements about the readability of the academic English subtitles.

Questionnaire statement	Strongly agree (%)	Agree (%)	Neither agree nor disagree (%)	Disagree (%)	Strongly disagree (%)
I understand the contents better in the video with subtitles.	52.94	35.29	5.88	3.53	2.35
When the voice is unclear, the subtitles help me to understand.	58.82	31.76	2.35	4.71	2.35
When the voice is too fast, the subtitles help me to understand.	55.29	34.12	5.88	3.53	1.18
Having words and pictures together helps me understand.	65.48	27.38	5.95	1.19	0.00
I learn better when I see and hear at the same time.	64.29	29.76	4.76	1.19	0.00
Academic English subtitles show me how to write at university.	44.71	28.24	18.82	3.53	4.71

skills partially to the fact that, because it is not a focal point at school, the students do not necessarily know that their academic literacy capabilities are lacking. Van Dyk, Van de Poel and Van der Slik (2013:356) point out that first-year students' high estimates of their own reading skills only become 'more realistic' after they have received results from their first assessments, and only then are they 'critical about their abilities and more willing to change and adapt their learning strategies and accommodate to the academic community'. Mediations such as educational subtitling can therefore be especially helpful in bridging such overlooked knowledge gaps (Kruger-Roux, Louw & Du Preez 2020:n.p.).

Affective questions and responses

To gauge the participants' reception to and experiences of the subtitled videos they watched, the questionnaire contained items rating their affective responses to the subtitles on a five-point Likert scale. The options on the scale ranged from strongly agree to strongly disagree. Participants were then divided into small focus groups on Zoom, where they could discuss how they felt about using subtitled videos. Participants' responses to the academic English, plain English, and keyword subtitles were tested separately. Participants' overall reactions to the subtitles were considered first, and then their responses to the different subtitling options were reviewed.

In a series of statements on the questionnaire, participants were asked about the comprehensibility of the academic English subtitles. Participants' feedback in response to these statements is detailed in Table 1.

Participants were also presented with a statement about the readability of the plain English subtitles. There was a generally positive experience among participants of the plain English subtitles as an educational mediation, and most participants found the plain English subtitles to be a helpful learning aid, as shown in Figure 2.

Another important aspect of rating the participants' reception was determining whether any aspects of the subtitles hampered their learning and viewing experiences. The Likert scale section of the questionnaire included statements designed to test certain propositions that would help to ascertain this. The participants echoed the responses illustrated in Table 2 during the focus group session, stating that they did not feel that the subtitles obstructed important images on the screen.

Focus group responses

In terms of the subtitle options (verbatim, plain English, and keywords), the participants responded fairly positively to the verbatim academic English subtitles in their focus groups, with one of the participants noting that:

'[I]n videos where we had the anatomy [terms] explained to us, it helped to have the subtitles there so that we could pause and look at how they spelt it and it helped in the long run as well because we could both read and listen to what they were saying.' (Participant 11, male, 21 years old)

Some participants also found the verbatim academic English subtitles to improve the module's level of accessibility, with one participant stating in the focus group:

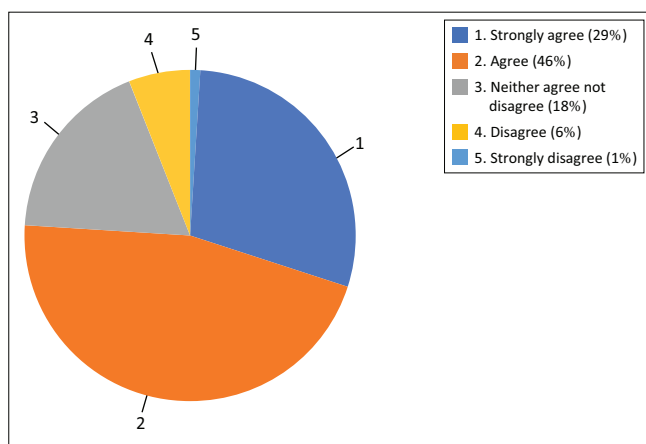


FIGURE 2: Participants' response to whether they found the plain English subtitles easily readable.

'I have a lot of problems hearing lecturers, especially if I can't see them, so I can't read their lips ... so having the subtitles was amazing.' (Participant 10, female, 20 years old)

In the videos presented to the participants, the visual is mostly of the dissection, and the speaker is visible only for very short periods. As a result, the added subtitles are a characteristic of good discipline-specific videos where the audio and visual channels are used to maximise working memory (Barne 2015:n.p.).

Although the keyword subtitles were not as widely used (see Figure 3), they were still received relatively positively by participants, with one participant in the focus group specifically saying:

'after taking notes down, I would watch specifically with the [keywords ... it helped] to highlight specifically the keywords that were important for that section within the video.' (Participant 6, female, 20 years old)

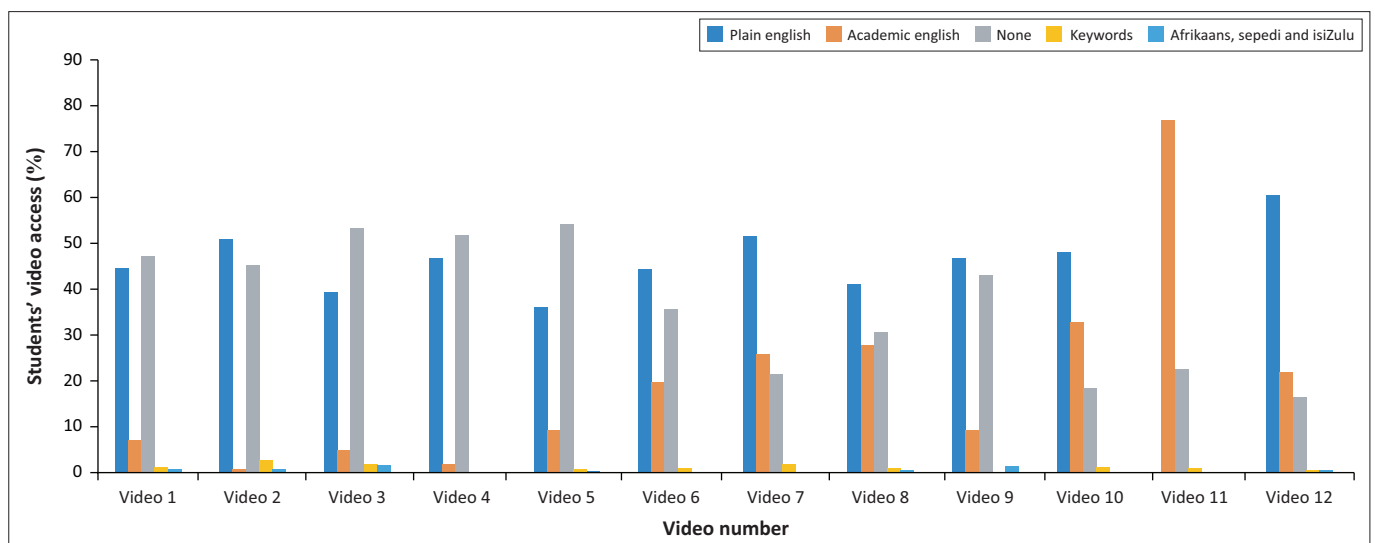
Other participants in the focus group agreed that this aided in their note-taking while watching the videos.

This indicates that, in general, the participants responded positively to subtitled material in their module's videos, with 57.65% of the participants strongly agreeing that subtitles should be used in all university videos and 32.94% agreeing. In the focus group discussions, agreement with the statement that subtitles should be used in all university videos was further verified, with one of the participants noting:

'I like the fact that I can hear what they're saying and see what they're saying at the same time.' (Participant 8, female, 20 years old)

TABLE 2: Participants' responses to statements about the subtitles' possible intrusion on their learning and viewing experience.

Questionnaire statement	Strongly agree (%)	Agree (%)	Neither agree nor disagree (%)	Disagree (%)	Strongly disagree (%)
Subtitles make it difficult for me to focus on the image.	5.88	12.94	28.24	38.82	14.12
The subtitles distract me.	0.00	7.06	18.82	40.00	34.12
The subtitles hide an important part of the screen.	1.18	2.35	10.59	42.35	43.53



Note: No statistics on plain English subtitles are available for Video 11, as the video was not subtitled in plain English because of its length.

FIGURE 3: Video access by percentage of the participants and subtitle preference.

The participant also noted that the subtitles assisted them in paying better attention to the study material. The questions from the questionnaire are sampled in Table 1 and Table 2.

Actual access to and use of subtitles

To determine the participants' actual access to the subtitled videos (in addition to videos they watched as part of the questionnaire), Google Analytics statistics were retrieved and analysed. In total, 12 videos were made for the module, and these were subsequently subtitled with verbatim academic English, plain English, and keyword subtitles. Participants accessed most of the videos independently, although they were only required to specifically access Video 5 and Video 6 for the study. Figure 3 shows the spike in subtitle access after the participants were required to watch Video 5 and Video 6. Figure 3 represents data gathered from YouTube viewing statistics and Google Analytics.

It is clear from Figure 3 that participants largely watched the videos without subtitles even before they were required to view Video 5 and Video 6 for the study. However, interestingly, the participants consistently seem to have preferred the plain English subtitles above the verbatim academic English subtitles, with the plain English subtitles use even surpassing the use of the academic subtitles and no subtitles at all for Video 6 and Video 7. This is consistent with the participants' affective responses to the subtitle questionnaire, as most participants strongly agreed that the subtitles in plain English were easy to read, as discussed in the qualitative results above. The popularity of the plain English subtitles could possibly be ascribed to the uneven distribution of the participants' HLLs, as set out in Figure 1. It can also be attributed to the English medium of instruction at the University of Pretoria and, therefore, the language in which students are assessed.

Discussion

The data analysis from this study affirms the various benefits of subtitling, and specifically, it shows that students are highly receptive to the use of subtitles when adequately prepared for it. From these results, it is clear that using subtitled learning materials in a tertiary education context is received well by participants. The subtitles are generally perceived to impact the participants' learning experiences positively, based on the responses of the students (Perego et al. 2016:220). Specifically, plain English subtitles (in a scientific context, in the case of the present study) were received especially well and can be refined based on participant feedback. The subtitles are generally not a distraction from the educational materials and are, in fact, a helpful mediation in terms of aiding in participants' note-taking, increasing the speed at which they can access and process information through pausing the videos, highlighting important information in the study materials, and engaging both aurally and visually with the learning materials.

Research into academic subtitling as an academic mediation tool has the potential to bridge the gap in the fulfilment of South African higher education institutions' language policies and support innovative research in higher education. Universities can address the South African language diversity issue and advance inclusivity in education by offering multilingual subtitles (Lacroix 2012:25, 35). With the use of this strategy, students who may not be fluent in the language of instruction can access and understand academic material (Hlatshwayo & Siziba 2013:90). Additionally, academic subtitling can promote new research and develop a diverse academic community by facilitating collaboration and knowledge sharing between academics with various linguistic backgrounds.

Conclusion

The present study has substantiated that subtitled learning materials are a positive asset to tertiary education. Almost none of the participants found the subtitles to be a distraction or hindrance to their learning experiences, and they made good use of specifically the plain English subtitles when motivated to do so. Having a broader and more diverse understanding of viewers' receptions of and responses to subtitled educational materials is useful in determining whether subtitling can be adopted as an academic mediation in other tertiary education contexts.

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

The study conceptualisation, methodology, writing, editing, investigation and formal analysis was the responsibility of E.K.-M, while conceptualisation, visualisation, administration, and supervision was the responsibility of H.K.R.

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Data availability

The authors confirm that the data supporting the findings of this study are available within the article and/or its supplementary materials.

Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors, and the publisher.

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