Rhetorical Strategies Used by Information Technology Students in In-Class Presentations

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Abstract

Rhetoric plays an important role in helping information technology (IT) professionals communicate their ideas clearly and effectively. By employing rhetorical devices when speaking about technology topics, IT professionals can present logical and convincing arguments, and demonstrate their knowledge and expertise while engaging the audience and making complex technical concepts more accessible for non-experts. This study attempts to understand how IT students construct and develop persuasive arguments by analysing their use of rhetorical strategies in a sample of persuasive presentations delivered in the course "English for IT". Both corpus analysis and manual analysis were used to identify different types of rhetorical strategies students employed to influence their audiences' attitudes. The results show that IT students not only created a logical appeal which might be more natural for them but also employed a wide range of rhetorical strategies and devices to establish disciplinary credibility and create a more personal connection with their audience, thus maintaining an appropriate balance of logos, ethos and pathos. The study further recommends systematic and careful rhetorical analysis of ESP (English for specific purposes) students' spoken language across disciplines and the consequent adaption of learning materials and teaching methods to improve ESP students' rhetoric skills.

Keywords: ethos, logos, information technology students, metadiscourse markers, pathos, persuasive presentations

Despite the traditional concept of science and technology as formal, objective, and impersonal, there appears to be a "general agreement that science is indeed a rhetorical enterprise" (Selzer, 1993, p. 6). Science and technology rely on rhetoric to communicate scientific knowledge, and to persuade others of the validity of its claims. Rhetoric is used in various forms such as writing reports for publication, presenting research findings at conferences, or communicating ideas through the Internet, television and journals. Frye and Damrosch's (2001) observations that the only road from grammar to logic runs through the intermediate territory of rhetoric since "anything which makes a functional use of words will always be involved in all the technical problems of words, including rhetorical problems" (p. 331), suggest that science and technology inevitably involve rhetoric because they need language as well as other symbol systems, such as figures, visuals and different symbolic notations. Even though scientific communication is recognizable as scientific rather than poetic, economic or political, it "does not ensure that all scientific communication is exactly the same, and it does not rescue scientists from the chore of persuading their peers" (Reeves, 2005, p. 73). The scientists aim to convince their audience of the validity of their observation, and they often tend to exaggerate especially when accommodating their texts. Fahnestock (1986) emphasizes the importance of the rhetorical character of scientific articles whose main purpose is "to celebrate rather than validate" (p. 279). Gross (2006) and Latour (1988) claim that the making of scientific knowledge is a social and rhetorical process rather than exclusively rational. Rude (1992) adds that "if scientific knowledge is socially constructed, rhetorical issues (motivation, social networks. and persuasion) play an important role in the making of this knowledge" (p. 88). Gross (2006) further suggests that scientists are not only persuaded by logos, the logical structure of argument, but also by ethos represented by a network of scientific authority relationships and its values and pathos reflected in emotional appeals that are "clearly present in the social interactions of which science is the product" (p. 28), for example, in cases of peer-review procedures or proposed research in a controversial area, therefore scientists are expected to use a combination of rhetorical strategies such as logos, ethos and pathos to effectively convey their message.

The typical features of the language of information technology (IT) professionals are accuracy, conciseness, consistency, completeness, and clear organization. IT professionals like all scientists rely on evidence and reasoning when they make claims about their data. However, data may be interpreted in more ways than one, so it is important for IT professionals to "understand scientific rhetoric, the art of persuading a scientific audience that a claim is valid and viable given the available evidence" (Reeves, 2005, p. 4). In the course English for IT, students often enthusiastically engage in in-class debates and conversations about technical topics, yet when delivering a formal presentation, their enthusiasm is often restrained in favour of serious and impersonal recitation of dry facts because the information is supposed to be precise and accurate, and the students might also fear that too much enthusiasm casts doubt on scientific objectivity. Therefore, they should be trained to give effective presentations, argue rationally, and advance not only discipline-specific but also English language knowledge via such argumentation.

In IT, if a speaker can persuade a listener to do or at least listen to what they are saying, they can influence their decisions, judgments, and selection. Not only must IT professionals select words, sentence styles and formats that belong to their scientific discourse, but they must also understand scientific rhetoric or the art of persuading a potential audience that may range from experts in their field, who might be sceptical about their findings, to wider audiences, especially if their topic is controversial or interesting to the general public. Thompson (1998) explains that "developing persuasive language powers is one technique which can make you a powerful

communicator" (p. 39). Similarly, Reeves (2005) confirms that "a good scientist is not only a good technician, a good experimenter, but also a good communicator" (p. 96).

The arguments mentioned above reveal that rhetoric is central to science, and not only scientists but also students of different scientific disciplines should be trained to improve their rhetorical communication. For this reason, this study aims to analyse how students of English for IT employ rhetorical strategies in their presentations related to their field of study and how they incorporate individual components of the Aristotelian (2010) triad (logos, ethos and pathos) in their presentations to appeal to their listeners.

Literature Review

Little research has been done in the field of the persuasive language of ESP students. Most empirical studies deal with the written form of persuasive language. Aziz and Ahmad (2017) tried to identify the distinctive features of persuasive essays adopted by Malaysian students of English. Using the Toulmin model (Karbach, 1987), they discovered that while the students applied the basic persuasive components such as claiming, giving evidence and justifying, their essays lacked more complex persuasive components, such as qualifying, rebutting and backing. Ho and Li's (2018) analysis of 181 argumentative essays of the students at the University of Hong Kong showed that some students had problems using metadiscourse in constructing convincing arguments. A study by Khairuddin, Rahmat, Noor and Khairuddin (2021) revealed that Malaysian university students of English failed to pay attention to their credibility as writers when writing persuasive essays. Saputra, Jumariati and Febriyanti (2021) used a questionnaire and an open-ended interview to identify the problems that students of Lambung Mangkurat University faced while writing argumentative essays in English. The results indicated that the students had problems with cognitive aspects (lack of knowledge of the key features of an argumentative essay), linguistic aspects (content, grammar, organization, vocabulary, claim, and evidence), and psychological aspects (fear of making mistakes, lack of self-esteem, and low motivation) that affected their writing.

Very few empirical studies have dealt with the spoken form of persuasive language used by university students. Most of the studies focus on an analysis of rhetorical moves and metadiscourse of an academic genre of three-minute thesis (3MT) presentations by graduate students from different disciplines. A study by Hu and Liu (2018) examined the rhetorical structure of 3MT presentations to discuss disciplinary distinctions between hard and soft sciences, and pure and applied sciences. They analysed a corpus of 142 thesis presentations by PhD students of biological sciences, mechanical engineering, education and history at 70 universities across the world and identified eight distinct rhetorical moves, including obligatory moves, such as Orientation, Rationale, Purpose, Methods, Implication, and Termination, and two optional ones, Framework and Results. Their analysis revealed statistically significant associations between disciplinary affiliation and the likelihood to employ three moves (i.e., Framework, Methods, and Results). Specifically, even though the hard-discipline students were much less likely to deploy a Framework move than the soft-discipline students, they were much more likely to employ a Methods move. Furthermore, the pure-discipline students were more often observed to deploy a Results move than their applied-discipline counterparts.

Hyland and Zou (2021) analysed 140 3MT presentations in the worldwide competition of PhD students of the physical and social sciences. Drawing on Hyland's (2005a) stance model, they attempted to analyse hedges, boosters, attitude markers and self-mention that students used to project themselves into their texts to communicate their integrity, credibility, involvement and

relationship to their subject matter and audiences. Their findings showed that while hard science students took a stance by casting doubt or asserting certainty in the reliability of the information, social science students claimed an authorial self through a more visible personal presence and explicit affective commentary. Similarly, Qiu and Jiang (2021) used Hyland's (2005b) stance and engagement framework to examine how the popularisation of scientific knowledge had influenced the ways 80 presenters from six disciplines interact with their audiences. The results showed that stance markers were more often used than engagement markers, while explicit mentions of self and listeners were the most common features. Additionally, presenters in the hard sciences, compared to those in soft-knowledge fields, made more use of the interactional features, but rhetorical questions were more frequently used in the soft-knowledge fields.

Considering the lack of studies dealing with undergraduate ESP students' spoken form of persuasive language, this study aims to contribute to the current state of knowledge and identify the characteristic rhetorical strategies used by students of the bachelor's study programme "Information Technology" at Brno University of Technology. The following research questions were defined:

1. How did English for IT students employ rhetorical concepts of logos, ethos and pathos to argue and support their claims in their presentations?
2. What were the most common rhetorical strategies English for IT students used to persuade their audience?

Method

The present research study was based on the analysis of in-class presentations in the course "English for IT" taught at the Department of Foreign Languages at Brno University of Technology. According to the syllabus of the course, students are required to deliver in-class persuasive presentations on a product or service related to their field of study. This approach helps support active and strategic learning leading to the improvement of students' speaking skills involving the art of rhetoric. The presented products or services could be real or fictional and the areas from which they could be chosen include desktop computers, laptop computers, mainframes, components of the motherboard, input devices, output devices, storage devices, system software, application software, computer networks, networking hardware, Internet access and Internet safety. In the participants' presentation, students were required to include specific points unique to the target group of customers and a description of the product or service including the advantages of buying and using it. They were supposed to support their speech with visual resources or, if possible, with the help of a physical demonstration. The length of a presentation ranged from 5 to 7 minutes.

A total of 75 students, 35 Czechs, 35 Slovaks and 5 Russians in the first year of a bachelor's study programme at the Faculty of Information Technology at Brno University of Technology, participated in the research. The students' English language level was B2 according to the *Common European Framework of Reference for Languages* (CEFR) and the *Global Engineers Language Skills (GELS) Framework*. The *GELS Framework* (for more details, see Rinder, Geslin & Tual, 2016) states that students with B2 language level can describe and give effective instructions about specific processes and methods within their field of engineering, and they can interpret data spontaneously and share their understanding precisely and concisely when giving pre-learnt speeches in the English language. Even though the *GELS Framework* includes an ability to convince both non-expert and expert audiences in the description of the

C1 level, the students of the course "English for IT" are instructed on how to deliver persuasive presentations. Besides the unit dealing with features of persuasive language in the coursebook *English for Information Technology* (Ellederová, 2022), students watch illustrative videos and analyse persuasive strategies used by speakers from the IT sector, including Steve Jobs, Elon Musk, Sebastian Linus (a Canadian YouTuber best known for creating and hosting YouTube channels that cover technology, especially Linus Tech Tips) and Christina "CK" Kerley (a powerhouse speaker and strategist who helps modernize Fortune 500s brands, business models, and workforces for the digital age). Students also develop different rhetorical strategies in in-class argumentative debates on controversial topics from the field of IT and are accustomed to being recorded in classes for educational purposes. Besides giving presentations, they often participate in role-plays and in-class debates where their self-assessment and feedback on their fellow students' performance are required after watching the recorded videos.

For the study, the presentations were video recorded in the classroom during the summer semester of 2022. All students gave written consent that the recordings could be used for the purposes of the research. Even though, they could decline participation in the research, all students agreed to participate and learn about the research outcome. Transcripts of all presentations were uploaded and analysed in the corpus manager and text analysis software Sketch Engine (Kilgarriff, Rychly, Smrz & Tugwell, 2004). The whole corpus of IT students' presentations included 75 transcribed presentations, 57,814 tokens comprising 50,294 words, and the researcher as a transcriber identified some 3,232 sentences.

Two methodological approaches were used to identify and analyse rhetorical strategies and devices: a corpus analysis and a manual analysis (e.g. Ellis & Barkhuizen, 2005; Friginal, Lee, Polat & Roberson, 2017). The corpus analysis was mainly used for the identification of figures, attitude markers, boosters, engagement markers, self-mention, linking devices, question tags, imperatives, exclamations, alliteration and some types of hyperbole. The manual analysis was necessary to identify humour, anecdotes, metaphors, rhetorical questions, flattery and tricolons. A similar research design was used by Dontcheva-Navratilova, Adam, Povolná and Vogel (2020) who recommend processing the text in the corpus manually for "fine-grained contextualised analysis" (p. 13).

Results

Oral presentations where students tried to present a particular product or service to potential listeners from an IT sector provided some interesting variations on the Aristotelian triad because, although the students' crucial responsibility was logos (i.e. to report facts, features, and functions of the product or service), pathos determined by emotional impact and ethos including the speakers' credibility and knowledge of the social and psychological characteristics of their audience as the specific discourse community played an important role as well. The following sections focus on the analysis of rhetorical strategies to appeal to logic, values or trust, and emotions.

Logical Appeal

The logical appeal can be very powerful when applied correctly by IT students, allowing them to convince their audience through logic and evidence rather than authority or emotion. Table 1 lists the rhetorical strategies students employed to create a logical appeal.

Table 1
Rhetorical Strategies for Creating a Logical Appeal in IT Students' Presentations

Logical appeal	Number	%
Listing and adding	2013	63.90
Contrasting	322	10.22
Figures and statistics	235	7.46
Conditioning	227	7.21
Reasoning	204	6.48
Exemplifying	90	2.86
Making a new start	24	0.76
Reinforcing	16	0.51
Changing the subject	14	0.44
Summarizing and generalizing	5	0.16
Total	3150	100.00

Technical details such as specifications, measurements and performance numbers helped students provide an objective assessment of their product to demonstrate its superiority over competitors. Students used facts, figures and statistics (Example 1) to explain the benefits of the presented product. They also discussed product characteristics and processes (Example 2) in detail to help the audience understand how it works, what features are available and why they should choose it.

(1) *During last year over **10 billion more attacks** were recorded worldwide and over **30 million devices** were infected with malware, and these numbers are expected to grow even bigger in the future.*
(2) *Sadblock uses keyword blocking and dynamic filtering. **Dynamic filtering analyses** the content and looks for specific content to identify. **If it evaluates** it's negative in any kind, the content on that page **will be automatically blocked**. **This is done by searching through** the text and format of the page **while looking** at this text…*

Since logos is an appeal to rationality, referring to the clarity and logical integrity of the argument, it seems more natural for IT students than the other two appeals, pathos and ethos. However, the logical appeal is only achieved if the audience is able to follow the speaker's logos, so students tried to process and elaborate their arguments by listing and adding, signposting, reasoning, conditioning, exemplifying, reinforcing, contrasting and summarising to make their speech persuasive.

As Table 1 indicates, the most frequent strategy for logical appeal was listing and adding. Students used the linking devices *and, first, second, third, also, then, next, too, as well as, last but not least, both… and…, finally* and *in addition*. Example 3 shows how these linking devices helped students connect ideas, further develop them, and create a logical flow to their presentation.

(3) *And **last but not least**, we have a fully adjustable stand allowing you all sort of all sorts of pivoting swivelling tilting to adjust the monitor to the position you want making this **not only** comfortable **but also** convenient.*

Using *well* and *now* to signal something new and expressions *by the way, now that I showed you, let us look at* to change the subject (Example 4) helped students guide their audience through the presentation and compel them to keep listening.

(4) ***Now that I showed you*** *the basics of how the Snackatron 3000 works,* ***let's all look together*** *at all the marvellous foods that it can make for us…*

Contrasting was the second most frequent strategy used to create a logical appeal. Students used *but, while, however, although, even though* and *on the other hand* to emphasize the differences between products, show that one idea is stronger than another or point out different sides of their arguments (Example 5).

(5) *So* ***even though*** *we have to consider configuration which you selected, when it comes to design, we try to make it as portable as possible.*

Another rhetorical strategy appealing to logic was conditioning. Conditional clauses are often used in persuasive discourse since they can provide evidence to back up a speaker's or writer's argument by describing circumstances, expressing dependencies, or conveying demands with consequences (cf. Fahnestock, 2011; Carther-Thomas & Rowley-Jolivet, 2017; Dontcheva-Navratilova et al., 2020). Using conditional clauses allowed students to express facts (Example 6), make predictions based on their observations and experience and draw conclusions from data (Example 7). These strategies helped them form a logical argument that could be shared among their audience for evaluation, criticism, and further refinement.

(6) *Well, as I have described earlier, it has the tools for teamwork, but* ***given*** *the fact that part of the Reflux package is the Reflux SR or the standalone renderer, a shared render farm can be also implemented.*
(7) ***If*** *we look at the price, MacBook is more than twice more expensive than Acer.*

Reasoning helped students build an effective case for their point of view by using evidence, facts, examples, and logic to support their claims. Using linking devices such as *because, since, therefore, so, that is why, the reason why* and *due to* helped students support their claims as well as anticipate potential objections from the audience, and consequently provide counterarguments or rebuttals to those points (Example 8). By reasoning students made the audience concentrate on the statements and accept them as true (cf. Young, 2017), thus giving them confidence in what they were being told and making them more likely to agree with the speakers' viewpoints.

(8) *CCleaner ratings are another* ***reason why*** *I think you should be interested in using this software* ***because of*** *its advanced features yet very simple user interface.*

Exemplifying allowed students to back up what they were saying with examples to contribute to the logos of their arguments. Students often used expressions *for example, for instance, like, such as* and *namely* to provide specific and vivid examples for the purpose of adding more information to clearly explain and illustrate features, functions and advantages of the presented product (Example 9).

(9) *Some other useful utilities included in CCleaner are,* ***for example****, disk analyzer browser plugin manager or software updater.*

A similar purpose was achieved through linking devices *besides, apart from, anyway, in fact* and *what's more* that students used for reinforcing, as illustrated in Example 10.

(10) ***What's more****, it's all wrapped in minimalistic beautiful and easy-to-use interface.*

The linking devices for summarizing and generalizing *to conclude* (Example 11) and *to sum up* were used less frequently than the other linking devices. This was probably because of the character of the presentation where the main aim was to appeal to the listeners' emotions and persuade them to buy the particular product, so most presentations concluded with powerful questions (e.g. *What are you waiting for?*), conditional imperative clauses (e.g. *And if you have any questions feel free to ask.*) and imperatives (e.g. *Then join us and achieve things you've always dreamed of.*).

(11) *And* ***to conclude*** *this presentation, I'm going to shed some light on a couple of the most frequently asked questions.*

Ethical Appeal

Ethos is an ethical appeal related to the speaker's credibility and competence that involves their stance and tone taken towards the topic and its context (Cockcroft & Cockcroft, 1992). The statistical outline of different rhetorical strategies students used to create an appeal to ethos is presented in Table 2. Students mediated ethical appeal by different rhetorical strategies, such as using boosters, self-mention, expressing corporal identity, attitude markers and referring to expert opinion.

Table 2
Rhetorical Strategies for Creating an Ethical Appeal in IT Students' Presentations

Ethical appeal	Number	%
Expressing corporal identity: *we* and other expressions	490	46.67
Attitude markers	210	20.00
Boosters adding a sense of credibility and competence	182	17.33
Self-mention with boosters: *I believe/think/know/am sure/convinced*	86	8.19
Engagement markers	49	4.67
Expressing corporal identity: *we believe/think/know/are sure*	25	2.38
Referring to experts	8	0.76
Total	1050	100.00

As Table 2 shows, the most common strategy for creating an ethical appeal was expressing corporal identity (i.e. when a student spoke as a representative of or on behalf of a company). As Examples 12 and 13 indicate, by using the pronoun *we* and *our*, students conveyed the image of a company as a team or a group with a clear identity that shares responsibility for the presented product (cf. Bramley 2001).

(12) *However,* ***we guarantee*** *stability and warranty for free sensors on the same PC.*
(13) ***Our*** *motto is one system for all.*

Example 14 illustrates how expressing corporal identity can also engender solidarity with potential customers by addressing the audience using the second-person pronoun and identifying the product with the company's mission.

(14) *So, **you** really need a protection from that, and **we** have the perfect solution for you.*

The second most frequent rhetorical strategy for creating an ethical appeal was the use of attitude markers. Students' presentations included adjectives (e.g. *important, expected, significant, necessary, crucial, relevant, clear, required*), adverbs (e.g. *personally, honestly, essentially, obviously, even, indeed*) and expressions (e.g. *we (all) know, in my opinion, in my point of view*) to express judgements of necessity or importance of the presented product based on its technical specifications and facts. Examples 15 and 16 show how students attempted to enhance their credibility by adopting a subjective stance and sharing personal judgements with their audience. Besides, the inclusive *we (all) know* in Example 16 implies respect and open-mindedness toward the audience and acts as a positive politeness device because it reflects solidarity and links the speaker and the audience as members of the same discourse community of IT students (cf. Hyland, 2005a; Fahnestock, 2011; Dontcheva-Navratilova et al., 2020).

(15) *I **personally** don't like to pay for software which I don't know.*
(16) *We all **know** that optical cables are the best solution…*

Boosters adding a sense of credibility and competence, such as evidential, deductive and research verbs *know*, *show, prove, demonstrate* and *find*, and expressions *the fact that* and *importance of*, were used to express students' confidence and certainty in what they say, and to indicate involvement with the topic of their presentation as well as solidarity with their audience (cf. Hyland, 2005a). By using evidence-based language (Example 17), students were able to demonstrate their knowledge and understanding of the topic, as well as provide support for any conclusions or recommendations they made. Furthermore, the boosters allowed students to present themselves more professionally while still conveying their personal thoughts and opinions on a given subject.

(17) *Well, it has been **proven** by multiple studies that South VPN is faster, it's more effective, and it is easier to use for the average person.*

Another frequent rhetorical strategy to build a personal ethos was self-mention. Students often referred to themselves as an authority on a presented product using the expressions *I, my* and *myself* (Example 18). Despite Hyland's (2005a) observations that self-mention is rather rare in science and technology discourse, IT students employed this strategy quite frequently not only to demonstrate a confident and trustworthy image but also to give their audience the impression that they are personally involved and willing to share information (Example 19).

(18) ***I** tried it **myself** about a year ago, and since then, **I** live a quiet and peaceful life.*
(19) ***I** am really excited because today **I** have a chance to introduce you to something **I believe** you will find very useful.*

A frequent combination of the pronouns *I/we* with the boosters *believe, know, think, be (definitely) sure* and *be convinced*, as demonstrated in Examples 19 and 20, indicates the speaker's overt acceptance of personal responsibility and their explicit attempt to build a personal ethos of competence and authority in order to promote the confident and positive image as a representative of a fictional company (cf. Hyland, 2005a; Xiaoqin, 2017).

(20) *Well, **we believe** in a wireless future where all of your devices are connected…*

Since credibility is "most easily gained on the strength of company successes" (Hyland, 2005a, p. 78), students attempted to activate the ethical appeal by referring to experts, authorities or reviewers of the presented products or services to emphasize the trustworthiness of their assertions. In Example 21, a student mentions a popular Canadian YouTuber and technology demonstrator, Linus Gabriel Sebastian. Similarly, in the presentation on the headphones, a subsidiary of Samsung Electronics that designs home and car audio equipment is referred to (Example 22).

(21) *And all of those advantages make this not only, in my opinion, but also by* ***Linus Tech Tips****, the best gaming monitor out there right now*.
(22) *The Asus Golden Ear team worked with audio specialist* ***Harman Kardon*** *to create the latest version of Asus Sonic Master audio technology, and the results are astonishing.*

The engagement markers *let's, as you can see* and *you can see that/how* for direct appeal to the audience allowed students to acknowledge the presence of their audience, lead and manipulate them according to their intentions, focus their attention (Example 44), guide them to intended interpretations (Example 23) and anticipate their possible objections (cf. Hyland, 2005a, 2005b). Addressing the audience using *you* and inclusive *let's* also contributed to the development of a relationship between the speaker and the audience, which also helped realize an emotional appeal, as discussed below.

(23) ***As you can see****, the growth in processing power is stagnating more and more every single year.*

Emotional Appeal

Pathos is an essential factor in scientific presentations because it allows the presenter to convey more than just facts and make their arguments more compelling and memorable. By using rhetorical strategies for creating an ethical appeal (Table 3), IT students attempted to establish a more personal connection with their listeners, helping them not only better understand the importance of the presented arguments but also make complex technical concepts more accessible and relatable for non-experts. This could help ensure that everyone understood what was being discussed, making presentations much more effective overall.

Table 3
Rhetorical Strategies for Creating an Ethical Appeal in IT Students' Presentations

Emotional appeal	Number	%
Evaluative adjectives	531	45.23
Rhetorical questions	271	23.08
Interjections and sound words	88	7.50
Imperatives	61	5.20
Exclamations	52	4.43
Alliteration	33	2.81
Repetition	31	2.64
Hyperbole	23	2.00
Tricolon	19	1.62
Flattery	18	1.53
Question tags	17	1.45
Metaphors and personification	15	1.28
Humour and fun	11	0.94
Anecdotes	4	0.34
Total	1174	100.00

As Table 3 indicates, the most frequent strategy was the use of positive evaluative adjectives. Students described the features and functions of the products as *advanced, amazing, astonishing, brand-new, excellent, fast, great, ground-breaking, incredible, innovative, new, revolutionary, sleek, smart, special, stunning, unbelievable* and *unique* to express appreciation, invoke a positive judgement and support their expert opinions. Examples 24 and 25 demonstrate how students attempted to emphasize the value of the presented items and ensure that the audience would respond favourably to these positive assertions and would be eager to learn more about how they could benefit from it. To make a stronger positive evaluation, premodifiers were often added (Example 25).

(24) *With the **revolutionary** laser printer Canon ImageRunner C3125i, all of your problems disappear.*
(25) *It is highly customizable and comes with **modern ground-breaking** web addiction algorithms that will make scanning for viruses **much faster** and **astronomically more efficient**.*

A rhetorical question, an interrogative form that allowed students to interact with their audience more subtly and emotionally, was the second most frequent strategy to create an emotional appeal. Rhetorical questions in Examples 26 and 27 not only put forward suggestions and ideas but also require no answer other than the audience's agreement with the proposition implied. Their effects might vary, for example, to shake the confidence of the audience opposed to the persuader's view, reinforce an opinion already formed or forming, or simply to make the audience act (cf. Cockcroft & Cockroft, 1992 Fahnestock, 2011; Young, 2017; Dontcheva-Navratilova et al., 2020).

(26) ***Are you tired** of waiting for your documents to be printed?*
(27) ***Who doesn't want** to have files secured and safe?*

Another quite frequent category of rhetorical devices was interjections and sound words. Interjections were used to convey surprise and amazement (*Wow!*, *Oh!*), excitement (*Oh*

yeah!), delight (*Hmm!*) and approval (*Yeah!*). The other purposes of the interjections in students' presentations were to attract attention (*Hey! Behold!*) or ask for agreement (*Huh!*). The sound word *Boom!* to create imagery while describing a process or activity (Example 28) also occurred several times in the presentations.

(28) *The web page loads, you choose your current episode and press play.* ***Boom****. You've got hacked.*

When talking to their audience, students employed imperatives to urge their audience to act, instruct them on what to do, prevent them from taking inappropriate action and direct the imagination of the listeners proactively towards the benefits of the product (Example 29). They often kept the imperatives brief to maximise their effectiveness, as illustrated in Example (30).

(29) ***Imagine*** *the possibilities that smart lenses can provide.*
(30) ***Go*** *and* ***don't delay****.*

A direct appeal to the audience was also accomplished by using a second-person pronoun (Example 31), which indicates "a subtle and clever way to guide the thinking of the audience" (Halmari, 2005, p. 126) that signals the interpersonal function referring to social reality (Halliday, 2004).

(31) *Well,* ***you*** *and only* ***you*** *can access them.*

Exclamations (Example 32) were another persuasive device used by students to emphasize the quality of the presented product and influence the emotions, attitudes, and behaviour of the audience. Question tags (Example 33) performed similar functions.

(32) *Isn't it amazing?*
(33) *Let's change that* ***shall we****?*

Using hyperbole, students intended to make a statement salient by the excessive wording and extreme exaggeration to evoke strong feelings and make a powerful impression (Examples 34 and 35). Fahnestock (2011, p. 117) points out that hyperbole may be a very slippery device since both "understatement and overstatement become tools for signalling ironic intention", which is illustrated in Example 35 where the student's overstatement created a somewhat humorous effect.

(34) *It's* ***the best of the best*** *monitors, so* ***definitely*** *worth it, in my opinion.*
(35) *Now, if you still don't believe that this is* ***the single greatest greatest thing*** *that humanity* ***ever did, ever accomplished****, I invite you to ask some questions.*

As Table 3 demonstrates, another effective rhetorical strategy that occurred in students' presentations was flattery. This strategy evokes reciprocity, positive mood and liking (cf. Burger, Soroka, Gonzago, Murphy & Somervell, 2001; Grant, Krieger, Nemirov, Fabrigar & Norris, 2022). As Example 36 indicates, students complimented the audience on their expertise, intelligence and good taste to appeal to their vanity, make them feel good and encourage them to buy the presented product.

(36) ***Someone who knows the industry like you*** *can see a good bargain when it walks onto their doorstep.*

A tricolon is a persuasive device for organizing and presenting phrases, clauses, or sentences in groups of three (Jasinski, 2001). As Example 37 illustrates, tricolons helped students significantly strengthen their point of view and emphasize the benefits of the product in a memorable way.

(37) *What's more, it's all wrapped in* ***minimalistic****,* ***beautiful*** *and* ***easy-to-use*** *interface.*

Similarly, alliteration (Examples 38 and 39) functioned as another attention-grabbing and memorable rhetorical device.

(38) *This solid-state drive costs 99 US dollars and is the* ***best bang*** *for the* ***buck****.*
(39) *You can enjoy* ***crystal clear calls*** *with 2 outer mics that pick up your voice and preserve it against background noises.*

Repetition denotes a degree in a persuasive argument (Cockcroft & Cockroft, 1992), so it helped students create a greater agreement with the message. In Example 40, repetition creates a sense of rhythm in the language used as well as emphasis by reinforcing what has already been mentioned, thus making it more memorable for the audience.

(40) *And the* ***more*** *engines will explore this technology, the* ***more*** *games will use the powers of Ray tracing, thus resulting in* ***more*** *immersive experience.*

Personification and metaphors helped students paint a very clear picture of the product they were trying to promote. Examples 41 and 42 illustrate that using metaphors allowed students to attract their audience's attention and see the presented products in new ways by pointing to an unexpected and surprising resemblance or relationship between things (cf. Mulder, 1996; Thompson, 1998; Sopory & Dillard, 2002).

(41) *But look at this* ***little boy****. It's about the same capacity and is actually quite faster than the big one.*
(42) *ZenBook Pro Duo is a real* ***powerhouse*** *when it comes to performance.*

As listed in Table 3, students also included humour, fun and anecdotes in their persuasive presentations. Humour and fun link the speaker and the audience since they signal shared experience (Cockcroft & Cockroft, 1992; Reeves, 2005; Adam, 2017; Dontcheva-Navratilova et al., 2020) and similar underlying values (Meyer, 1997). Humour transforms the emotional state of the audience, implies "the power of intelligence, observation and understanding," and creates real communication because the "audience actively responds to the speaker through laughter" (Thompson, 1998, pp. 55–56). Example 43 illustrate how encouraging the audience to laugh together allowed students to create a sense of community, shared interests and experiences, thus breaking down barriers between them and their audience.

(43) *How are you supposed to have a good conversation with somebody if they sound like they are underwater, and they look like a pixelated character from a retro video game?*

Anecdotes (Example 44) helped students to provide an example of how the product could solve their potential problems in the real world and establish a rapport with the audience by

identifying with the speaker and understanding their character. They also might help students relax in the difficult introductory stage of the presentation.

(44) *I'll start with a quick story that's happened to me. Imagine it's Friday evening. You are playing Counter Strike Global Offensive with your friends, and suddenly this happens* [plays a video]. *If you see yourself in this video, then, my friend, admit it, it's time to buy a new mouse, for example, the M801 from Redragon. I personally have this mouse, and it has saved me from a lot of bridges.*

Discussion

The research results revealed that IT students employed a wide range of rhetorical strategies and devices of the Aristotelian triad in their in-class presentations. They appealed to logic in their speeches by presenting facts, figures and data that supported their points. They also used logical reasoning and exemplification of successful implementations to explain and prove why their ideas are valid and how they could be beneficial. Furthermore, to make their arguments more effective, a variety of linking devices for listing, adding, changing the subject, contrasting, reinforcing and summarizing were included. Referring to the expertise and experience of respected IT professionals, expressing corporal identity and using attitude markers and boosters allowed students to add a sense of credibility and competence to their speeches. Regarding pathos, students tried to use emotionally charged language full of positive evaluative adjectives, interjections and sound words, exclamations, alliteration and hyperbole. To make complex IT concepts more accessible and easier to understand for their audience, students used personification and metaphors. They also focused on connecting with their audience through rhetorical questions, imperatives, repetition, flattery and anecdotes that evoked emotion. Additionally, to make their presentations more entertaining and allow them to relate to their audience on a personal level, students used humour, which also had the potential to reduce stress levels among them and their audience.

The analysis of IT students' language in their persuasive speeches indicates that one of the biggest challenges for ESP students seems to be understanding the subtle differences between words and phrases that can change meanings significantly. This can make it difficult to effectively communicate ideas, particularly when appealing to logic, values or trust, and emotions. Having a limited vocabulary might be another challenge faced by some ESP students, which makes it hard for them to express themselves clearly when trying to appeal using logic or emotion since they do not always have the right words at their disposal, especially if their native tongue does not have equivalents for certain concepts expressed only through English terms and phrases (e.g. idioms). Nevertheless, most IT students did not have any problems with vocabulary and specialized terminology when giving their presentations, not only because their speeches were pre-learnt but also because they can gradually acquire specialized terminology in the course "English for IT". Finally, struggling with grammar appears to be a common issue among some ESP students who try to master all the rules associated with constructing sentences correctly to effectively convey thoughts and feelings. This might be challenging especially when trying to appeal to someone's emotional side since poor grammar will detract from their message instead of enhancing it, as some illustrative examples in the Results section showed. Grammar mistakes in IT students' persuasive presentations were, however, less frequent than when they had to respond spontaneously during in-class debates and discussions.

IT students must understand and be able to use formal, grammatically correct language and informal varieties of the language if their presentation is going to succeed. However, English as a lingua franca (ELF) settings must be considered as well. After they graduate from Brno University of Technology, IT students will work in multinational IT companies, such as IBM, Y-Soft, Vodafone, Red Hat, Avast Software and Zebra Technologies, where they will communicate with a large number of non-native English speakers rather than native English speakers and be exposed to different varieties of English. Non-native speakers will likely learn non-standard forms of English from each other, and they, as Björkman (2013) points out, "aim for functionality before any other factor such as conforming to what may appear as the norm, accuracy or language complexity" (p. 162). Communicative functions and fluency seem to be more important than accuracy for people who work in the IT sector because their goal is to employ pragmatic strategies to assure their language output is comprehensible and communication effective (cf. Mauranen, 2003, 2010; Smit, 2010; Björkman, 2013). According to Mauranen (2003, p. 7), "to hold up a native speaker model as the target for international users of English is counterproductive because it sets up a standard that by definition is unachievable," therefore a more effective solution might be to exploit ESP students' strengths in acquiring and focusing on those aspects of the language that are most useful in communicating with other ELF speakers, for example, rhetorical strategies and devices.

One of the limitations of the study is missing comparison of English for IT students' use of rhetorical strategies with the rhetorical strategies used by their native English counterparts since it is rather complicated to find corpora containing spoken language in the form of persuasive presentations by the similar group of native English speakers studying IT. Another limitation is that students' presentations were recorded gradually during the whole semester (three presentations in one class), so students who had their presentations later could improve their rhetorical strategies after listening to their fellow students. However, due to the organizational constraints of the academic year, it would be impossible to record presentations by such a large sample of students at the same time.

Recommendations

ESP students should learn how to use persuasive language by studying rhetorical devices to develop their logical arguments and evidence-based claims. They should review examples of successful rhetorical appeals in other speeches to identify effective strategies used by experienced speakers from their field of study and practice writing persuasive essays that incorporate strong and well-supported points. ESP teachers should design learning materials with tasks and activities for students focused on expressing different communicative functions (e.g. reasoning, suggesting, contrasting, agreeing and denying) and using linguistic means (e.g. metaphor, hyperbole, boosters, hedges, engagement and attitudinal markers) to appeal to the potential listeners and teach their students how to demonstrate their expertise and experience in the subject matter by citing relevant sources and data.

Future research in ESP students' persuasive language could address four issues. First, rhetorical strategies used in persuasive presentations by ESP students from different technical disciplines should be analysed and compared to provide insight into how students construct and present arguments that are tailored to their specific discipline. Additionally, understanding how these strategies are employed can help teachers better prepare their courses and aid in developing rhetorical skills necessary for success within the student's chosen field.

Second, the results of this analysis might be compared with rhetorical strategies employed in persuasive presentations by native speakers to identify areas where a non-native speaker's speech would benefit from improvement. By analyzing the patterns of language used by native speakers, non-native speakers could learn how to deliver effective persuasive messages.

Next, listeners' perception is another crucial factor determining the rhetorical effect, which can be achieved through the assessment of ESP students' presentations by their audience, including fellow students, teachers or even potential employers. The research findings might help determine the skills required for successful persuasion among ESP students. Besides, the opinions of the audience might allow presenters to understand how their presentations are interpreted by different people and thus better prepare their future speeches accordingly.

Finally, ESP coursebooks rarely include sections focused on rhetoric. Therefore, a systematic analysis of students' persuasive language might help ESP teachers identify both frequent and rare rhetorical strategies and consequently adopt teaching methods and design supplementary learning materials to help students develop and improve their art of rhetoric in science and technology.

Conclusion

This study examined and discussed the concept of rhetorical strategies in a genre of IT students' in-class presentations, which hitherto has not attracted much attention from researchers. Persuasive presentations on a product from the IT sector are a specific genre because they require a deep understanding of the product, its features, functions and benefits, and how it fits into the larger IT ecosystem. The presenter needs to be able to explain complex concepts in simple terms while also providing persuasive arguments, which requires the use of a wide range of rhetorical strategies and devices to convey the presenter's credibility and competence, appeal to their audience's sense of reason, and evoke a positive emotional response in their audience. Moreover, this type of presentation needs to be tailored to the target audience, which means that the presenter must understand their needs and how they will benefit from using the product.

The research on rhetorical strategies revealed that IT students maintained a balance of logical, ethical and emotional appeals. They successfully employed technical specifications, facts, figures, statistics and logical connectors to provide logical reasoning and well-structured arguments. Besides using facts, figures and statistics, the most frequent strategies were listing, contrasting, conditioning and reasoning. Expressing corporal identity, self-mention, attitude markers and boosters were the most common strategies that students used for enhancing credibility and gaining the trust of their audience. Rhetorical strategies and devices helped IT students structure their presentations so that they were logical, organized, and easy for the audience to understand. They also allowed speakers to emphasize key points, create persuasive arguments, and appeal to the emotions of their listeners. Rhetoric also assisted with conveying a sense of professionalism by providing language that was appropriate for the given situation and creating an engaging environment where students felt comfortable interacting with each other.

ESP students need to be able to use persuasive language and argumentation to effectively communicate their ideas and points of view, so it is important to systematically develop their rhetorical skills. To do this, they should practice their persuasive speaking by finding a topic related to their field of study, formulating arguments based on evidence, and then persuasively

presenting the arguments. ESP teachers should design activities that focus on effective rhetorical strategies such as in-class debating or public speaking which will help hone students' persuasive language skills.

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