Journal of English for Academic Purposes 51 (2021) 100976

Contents lists available at ScienceDirect

Journal of English for Academic Purposes

journal homepage: www.elsevier.com/locate/jeap

Stance and engagement in 3MT presentations: How students communicate disciplinary knowledge to a wide audience

Xuyan Qiu [a], Feng (Kevin) Jiang [b, *]

[a] School of Education and Languages, The Open University of Hong Kong, Homantin, Kowloon, Hong Kong SAR, China
[b] School of Foreign Languages Education, Jilin University, No. 2699, Qianjin Street, Changchun, Jilin, China

ARTICLE INFO

Article history:
Received 4 November 2019
Received in revised form 4 February 2021
Accepted 10 February 2021
Available online 15 February 2021

Keywords:
3MT presentations
Engagement
Stance
Popularisation of science
Academic persuasion

1. Introduction

Scientific communication is not only a skill that is emphasized in most graduate curricula, but is also the essential lifeblood for early-career and established scientists. It is a key goal of EAP to develop students' awareness and competence in presenting their academic work as an important disciplinary contribution while constructing themselves as plausible members of their discourse community (Berkenkotter & Huckin, 1995). However, the rapid development of communication technologies and changing ways of knowledge exchange are bringing up new academic contexts in which students, as future scientists, are exposed to a more unpredictable grouping of audience and diversified forms of interaction (Hyland & Jiang, 2019; Kuteeva & Mauranen, 2018). Against this backdrop has emerged a new academic genre, Three Minute Thesis (3MT) presentations, which challenge research postgraduate students to explain their research within three minutes to a general audience.

In addition to the potential to train research students to fine-tune their oral presentation skills (Feak, 2013), 3MT presentations have an additional important value of cultivating students' capacity to effectively communicate disciplinary

* Corresponding author.
E-mail addresses: christyxyq@hotmail.com (X. Qiu), kevinjiang@jlu.edu.cn (F. (Kevin) Jiang).

https://doi.org/10.1016/j.jeap.2021.100976
1475-1585/

knowledge in a language appropriate to a non-specialist audience. This educational focus is explicitly highlighted on 3MT websites of holding universities:

3MT celebrates the discoveries made by research students and encourages skills development in communicating the importance of research to the broader community. It is emphasized that 3MT is not an exercise in trivialising or 'dumbing-down' research but encourages students to consolidate their ideas and crystallise their research discoveries to engage a non-specialist audience[1].

While Feak (2013) and Boldt (2019) argue for an important connection between 3MT presentations and EAP teaching, Hu and Liu (2018) offered one of the first investigations of how students structure 3MT presentations. Carter-Thomas and Rowley-Jolivet (2020), meanwhile, examined recontextualisation strategies employed by 3MT presenters. However, little attention has been given to the rhetorical language use students draw on to construct a persuasive talk while building an inclusive relationship with their audiences. In this study, we seek to remedy this oversight by examining the stance and engagement markers (Hyland, 2005) typically employed in 3MT presentations and exploring how the patterns of social interaction may vary across disciplines. In so doing, we aim to show how the particular rhetorical contexts (Hu & Liu, 2018) of genre, register and disciplinary knowledge shape students' use of these metadiscoursal resources. The linguistic and rhetorical analysis of 3MT presentations pursued in this study not only has an immediate pedagogical value of assisting students to expand their genre resources but also raises an important implication for a special rhetoric which students need to learn in the popularisation of scientific knowledge. Before discussing our study, we begin by describing 3MT presentations and the building of social interaction in academic discourse.

2. 3MT presentation and storytelling of science

3MT competitions were initiated by The University of Queensland in 2008 with an aim to increase the capacity of research postgraduate students to effectively present their research to a general audience within a limited time. Participants are restricted to spoken words and can display only one static slide (animations, music and electronic media are not permitted). They are judged by members of a holding university and wider community based on a rubric that evaluates not only the 'comprehension and content' but also 'engagement and communication'[2] of presentations. Therefore the evaluation is mainly concerned with a clear and logical spoken narrative of science that captures and maintains the audience's attention.

Clearly, we see a discursive hybridity of 3MT presentations. First, situated in a spoken register, this narrative of science resembles other oral academic genres (e.g., seminars and conference presentations), attending to listeners' processing needs in a real-time speech event and seeking interpersonal rapport and collegiality (Aguilar, 2016; Hu & Liu, 2018; Rowley-Jolivet & Carter-Thomas, 2005). Unlike in most other academic genres, however, 3MT presenters address a disciplinarily heterogeneous audience and thus need rhetorical tactics to deliver a clear and accessible communication of complex scientific concepts to the diverse grouping of listeners, much as speakers do in infotainment talks such as TED talks (Bandler & Kiley, 2018; Scotto di Carlo, 2014). In addition, the competitive nature of the genre means that 3MT presentations are carefully scripted and well rehearsed for peak performance to impress judges. 3MT presentations, therefore, give shape to an informal style which does not require a high degree of subject-matter knowledge on the part of listeners but does centre around a project of disciplinary research. This points to the importance of persuasive interaction with the audience and the use of discursive strategies that tend to construe immediacy, affectivity, shared goals, and social support (Carter-Thomas & Rowley-Jolivet, 2020).

Besides such a hybrid nature, 3MT presentations are centrally seen as a particular academic genre by which we understand students' discursive practice not simply as an on-stage oral speech but more importantly as an endeavour to popularise disciplinary knowledge to a general audience. As Shaikh-Lesko, 2014 points out, such a special educational value makes 3MT competitions gain a global popularity, especially in today's academic context in which "being able to speak to people outside of a discipline is a valuable skill in a changing funding landscape" (p.62).

This ability is critical given the report that the public acceptance of science is hindered by scientists' lack of use of accessible language of technical information and a weak manipulation of engaging presentations of scientific results (Sugimoto & Thelwall, 2013). Therefore, 3MT presenters are encouraged to demystify scientific concepts and promote the outcomes of their projects, while reporting the research as an academic narrative. Essentially they seek to leave the audience with an understanding of what has been done, why it is important, and what to take away from presentations (Bandler & Kiley, 2018). Copeman (2015) likens this storytelling of scientific research to a business pitch, which presents "a carefully planned, easily understood spoken exposition of a new idea or product, with the goal of persuading the listener to accept its likely benefits (value proposition)" (p. 80).

3. Stance and engagement: two facets of academic persuasion

Like communication in other domains, academic interaction is widely acknowledged to be persuasive, so that academics do not simply report neutral facts but take a novel point of view towards what is discussed while anticipating their readers'/listeners' reactions to those views (Deroey, 2015; Hyland, 2001, 2004). Academic persuasion is displayed in both written and spoken discourse (e.g. Hyland & Guinda, 2012), because claims on research findings can hardly be self-evident enough to ensure that recipients take the same perspective and concur with the conclusions proposed. Therefore, to increase the accessibility of their findings, researchers work to create interaction in their discourse which involves not only their self-representation and positioning in relation to the issues they discuss but also their alignment with the audience (Di Scotto

Carlo, 2015; Hyland, 2010). The linguistic resources used to perform academic persuasion have been broadly described in terms of *evaluation* (Hunston & Thompson, 2000) and *appraisal* (Martin & White, 2005).

One widely used model, however, is that of stance and engagement (Hyland, 2005) which enables an automatic search of academic interaction in a large collection of data. For Hyland, stance and engagement are two sides of the interactional coin: stance is a writer-oriented, attitudinal dimension, including hedges, boosters, attitude markers and self mention while engagement concerns reader-oriented alignment, realized by reader mention, directives, questions, knowledge appeals and personal asides. The choice of these rhetorical resources is "socially situated in a disciplinary or institutional context" (Hyland, 2005, p. 175) since it represents one's judgements about a particular discourse community regarding acceptable and persuasive perspectives on what counts as knowledge. However, the model is essentially concerned with writer-reader interaction in written texts and has been applied in both synchronic and diachronic analysis of disciplinary writing (e.g. Hyland & Jiang, 2019; Jiang & Ma, 2018).

Nevertheless this model is also applicable to studying academic spoken discourse, since academic speech activities also extensively involve speakers negotiating a balance between authority and solidarity with their audience (Aguilar, 2016; Poos & Simpson, 2002), although spoken interaction features much more direct contact and immediate response. Yang (2014) examined both stance and engagement expressions in academic presentations and found disciplinary variations in hedges, boosters and self mentions across hard knowledge fields, while second-person pronouns were more often used across disciplines. In his study of conference presentations, Guest (2018) shows these interactional features offer a way of revealing how speakers represent their positions, convey information and persuade the audience of their reliability.

Clearly, stance and engagement are not simply a personal take on a claim or finding, but simultaneously tap into and represent a community's system of values, formulating how talk is shaped to make sense to the current interactants (Hyland, 2005; Hyland & Jiang, 2019). In this regard, the assumption that 3MT presentations not only involve an on-the-stage academic speech but rely on a discursive reconstruction of scientific materials for a wide audience necessarily impacts a range of features, not least how presenters express a stance and engage their listeners. In this study, therefore, we aim to explore the following questions:

(1) What are the frequency, forms and functions of stance and engagement features used in 3MT presentations?
(2) How do the particular rhetorical context of genre, register and disciplinary propositional content shape the presenters' rhetorical choices?

4. Corpus and analysis

4.1. Corpus

The corpus we created includes 80 3MT presentations by finalists of the competitions in a university in Hong Kong during the years of 2012–2019. The reason for selecting only one university is to minimize the potential influence of institutional complexity (cf. Carter-Thomas & Rowley-Jolivet, 2020). The presentations were marked by the university as science, engineering, medicine, arts, education, and social science, depending on the presenters' affiliations and propositional content of presentations, but are largely representative of disciplines in the hard sciences and soft knowledge fields (Becher & Trowler, 2001). The characteristics of the 3MT corpus are described in Table 1 below.

Here presenters from medical school, on average, produced the longest presentations while those from engineering majors registered the shortest ones. After having downloaded all the presentations from the university website, the first author manually transcribed all the presentations into textual words, excluding repetition, false starts, hesitation and filled pauses since they are not focus of our analysis, and the second author checked all the transcribed words verbatim to ensure the accuracy of the transcriptions.

Table 1
Characteristics of the 3MT corpus.

Discipline		Number of presentations	Length (words)	Mean length (words)
Hard disciplines	Science	15	6057	403.8
	Engineering	15	5658	377.2
	Medicine	21	8744	416.4
Soft disciplines	Arts	12	4754	396.2
	Education	7	2726	389.4
	Social Science	10	3968	396.8
Total		**80**	**31,907**	**398.8**

4.2. Modified model of stance and engagement

We draw on Hyland's (2005) model of stance and engagement for textual analysis, but as mentioned above the model is based on written discourse. Therefore, we piloted the interactional markers with the British Academic Spoken English (BASE) and the Michigan Corpus of Academic Spoken English (MICASE), which are widely used corpora of academic speech. This informed our decision to exclude those categories which are not likely to appear in spoken academic discourse. Additionally, we included 40 most commonly used attitudinal adjectives found in Di Scotto Carlo's (2015) study of TED talks, a similar type of scientific communication to a wide audience and these adjectives, such as *bad*, *good* and *fascinating*. Moreover, we renamed reader mention in the engagement categories 'listener mention', considering the spoken mode of 3MT presentations. A modified model comprising about 500 potential markers of stance and engagement was generated (see Appendix 1).

In our analysis, therefore, four key stance resources are used to express "an attitudinal dimension", referring to the ways 3MT presenters project themselves and convey their judgments, opinions and commitments (Hyland, 2005, p. 176):

- ***Hedges*** allow speakers to withhold complete commitment to a proposition and open a discursive space with listeners' disputation, such as *might* and *could.*
- ***Boosters*** help speakers present their work with assurance and shut down alternative voices, such as *in fact* and *must.*
- ***Attitude markers*** express speakers' affective attitudes to propositions, conveying surprise, agreement, appreciation and so on, such as *good* and *fascinating.*
- ***Self mention*** marks speakers' overt visibility and ownership to their contributions, such as *I* and *my.*

In addition, four categories of engagement are examined for the ways presenters rhetorically focus the listeners' attention and pull them along with their argument (Hyland, 2005, p. 178):

- ***Listener mention*** brings listeners into the on-going speech, normally through second person pronouns and inclusive first-person pronouns, such as *you* and *your.*
- ***Directives*** are instructions to the listeners, mainly expressed through imperatives and obligation modals, such as *consider* and *it's important to note.*
- ***Questions*** invite direct collusion by addressing the listeners as having an interest in an issue and a willingness to follow the speakers' argument, such as *And may I ask you a question?*
- ***Appeals to shared knowledge*** are signals asking listeners to recognize something as familiar or accepted, such as *obviously* and *normally.*

However, it is important to recognize that interaction is essentially an open category and can be multi-modally realized by body language in a spoken presentation, but our focus is on explicit textual devices which have been viewed as most pedagogically useful (e.g. Boldt, 2019). While not exhaustive, these items provide a basis for comparing rhetorical resources between disciplines. Furthermore, we are less concerned with the assessment process of 3MT presentations as a contest than how students project themselves and engage the audience with language features.

4.3. Analytical procedure

The corpus was part-of-speech tagged by *TagAnt* (Anthony, 2014) and then searched for the aforementioned interactional markers using *AntConc* (Anthony, 2019). Some features are very easily identified through a corpus word-search (*we*, *of course*) while others entail a regular expression search (*imperatives*, *it is adj to + verb*). After the concordancing search, we then manually checked the concordance lines containing every occurrence of these items to ensure that they were functioning as marking of either stance or engagement, and excluded extraneous examples. This process allowed us to avoid double coding if a word could be seen as having more than one function in context. Both authors worked independently and achieved a high inter-rater agreement ($\kappa > 0.08$) before resolving disagreements. Then the results were normalised to 1000 words to allow comparison across the corpora, and to determine statistical significances, *log-likelihood* (LL) test was run by Rayson's *log-likelihood* spreadsheet[2], and effect size (*%DIFF*) was also considered (Gabrielatos, 2018).

5. "More importantly, I think it tells the possibility": stance expression in 3MT presentations

We identified 1682 stance markers, amounting to 50.2 cases per 1000 words and 21.0 cases every presentation. This indicates that despite only a 3-min speech, 3MT presentations are saturated with presenters' efforts to project a personal voice and provide their own perspectives on how research claims are interpreted. Together with research writing, this interactional positioning is critical to academic persuasion since research findings are not self-evident enough to ensure that recipients take the same point of view (Jiang, 2017). However, it is noteworthy that stance markers are found more frequent in 3MT presentations than in research writing which contains about 30.9 cases per 1000 words as reported by Hyland (2005). This difference has much to do with the spoken register since Biber (2006) shows that stance features are much more commonly used in spoken than written genres. Speech settings typically manifest an interactive nature, with speakers

addressing an immediate audience, and this on-line character shows a higher involvement and a less impersonal stance-making practice (Crosthwaite et al., 2017).

This register characteristic may also explain the high frequency of self mention in the 3MT presentations. As shown in Table 2, explicitly mentioning oneself accounts for almost half of the stance expressions, typically by means of first person pronouns. Personal pronouns are shown to be commonly used in face-to-face communication (Biber et al., 1999), but more importantly, in 3MT presentations, this projection of self helps to present student speakers as "real, approachable people with concerns that many in the audience will be able to identify with" (Carter-Thomas & Rowley-Jolivet, 2020, p.24), creating a personal dialogue as seen in typical example (1) and (2) below.

(1) This is the question **I** address in my PhD study. **I** choose, **I** think of a stem cell and cardiac progenitor cell as **my** study target, which has the hottest star recently, but a great potential in cardiac medicine. **I** found six dominant ion channels exist in these cells. (Medicine)
(2) To achieve battery reliability, not only do **I** apply this controller within the micro grid, **I** also coordinate the controllers in multiple micro grids, so that if it has excessive power (Engineering)

However, this willingness to step into discourse differs remarkably from postgraduates' practice in research writing in which they are often found to avoid overt self presence because of stylistic guidance on academic prose (Qiu & Ma, 2019). This divergence points to Mauranen's (2002) argument that academic speech differs strikingly from comparable writing "in not being much regulated by guidebooks" (p.116). Furthermore, we may also see the presenters frequently mentioning themselves as an effort to foreground their personal role in the scientific exploration and claim credit for knowledge contribution as displayed in the examples above.

It is also worth mentioning in Table 2 that attitude markers are employed more frequently than hedging and boosting devices ($LL = 4.49$, $p < 0.05$, $\%DIFF = 18.09$; $LL = 46.72$, $p < 0.001$, $\%DIFF = 81.97$). As a blunt way to express personal feelings, attitudinal stance is typically disfavoured in research writing where epistemic judgement on knowledge is often prioritised (Hyland, 2005; Hyland & Carmen, 2012). However, this personal take appears more frequent in academic speech than writing (Biber, 2006), and a similar pattern is found in 3MT presentations that the affective expression is heavily used (3) and (4). The emotional appeals triggered by these captivating descriptions help to create strong interpersonal ties and thus "transform knowledge dissemination into an entertaining event that makes science accessible and acceptable to general audiences" (Di Scotto Carlo, 2015, pp. 210–211). Furthermore, this provocation of emotional reaction is also in line with the spirit of scientific popularisation which emphasises the uniqueness, rarity, or originality of research findings (Bamford, 2014; Calsamiglia, 2003).

(3) Humanity in its infancy was **dramatically** shaped by the **great** discovery of fire. (Science)
(4) these stem cells are **amazing** because they have the most **fantastic** ability to repair damaged cells. (Medicine)

In addition, we can also see in Table 2 that hedges are more frequent than boosters in 3MT presentations ($LL = 22.44$, $p < 0.001$, $\%DIFF = 54.10$). These two rhetorical devices are dual sides of the same coin in the expression of uncertainty and certainty about a proposition, in which hedges are used to weaken the force of authorial claims while boosters mark a strong assertion (Aull & Lancaster, 2014; Hyland, 1998). Hedges are also found more frequent in academic writing, reflecting "the critical importance of distinguishing fact from opinion and the need for academics to present their claims with appropriate caution" (Hyland, 2005, p. 186). However, another reason for this higher frequency in 3MT presentation is that the miscellaneous disciplinary background of listeners may reduce the confidence of presenters in how much their propositions can be widely accepted. Therefore, it is more often to see presenters withhold their statements on information and express respect for alternative views in (5) and (6).

(5) They are more **likely** to suffer from depression, which is **possibly** due to working overtime in factories assembling iPads or engaging in risk healthy behaviours such as smoking, compared to the locals. (Medicine)
(6) Cooperative marriage **may** be a queer pathway to something gay people long for. It **may** be a way out or **may** be a way to walk past. (Social Sciences)

Table 2
Frequency of stance markers in the 3MT corpus.

Category		Per 1000 words	Standard deviation	%
Stance	Self mention	23.5	2.8	46.9
	Attitude markers	11.1	0.5	22.1
	Hedges	9.4	0.3	18.8
	Boosters	6.1	0.3	12.2
	Total	**50.2**	**4.0**	**100.0**

Despite the above likely influence of the register and genre feature of 3MT presentations, it is also interesting to observe disciplinary variation in the stance-making practice. Presenters in the hard domains make more use of stance markers than the peers in the soft knowledge fields, averaging 54.4 vs 46.6 cases per 1000 words ($LL = 8.78$, $p < 0.01$, $\%DIFF = 15.88$). A further look at the disciplinary distribution of stance categories shows that the difference mainly stems from attitude markers ($LL = 8.62$, $p < 0.01$, $\%DIFF = 38.54$) and self mention ($LL = 5.23$, $p < 0.05$, $\%DIFF = 18.96$). Table 3 presents a detailed disciplinary distribution of stance markers.

The more frequent expression of stance in the 3MT presentations in hard sciences largely aligns with what Hyland and Jiang (2016) have found in their diachronic study of research writing. They show that scientists now display more authorial intrusion and a more visible stance than in the past, attributing it to "the need to address audiences beyond an immediate group of informed insiders to promote both one's research and oneself" (p. 269). Hard sciences are typically concerned with abstract concepts and seek to establish empirical uniformities which define relationships between observed phenomenon, and rely on "inferred structures or processes that are not directly accessible to public experience" (Kolb, 1981, p. 244). Therefore, a palpable personal stance can help to formulate the presentation of the abstract scientific subjects in a collegial manner and assists a diverse audience to make a better sense of the presented scientific knowledge. We may have a flavour of this communicative effect in the exemplar 3MT presentations below.

(7) And **I found** the results are **very astonishing. I found** that **most of** the electrons are **actually** suffering from a **serious** loss process in the material. (Science)
(8) The results are **incredible.** These **might** survive better. So **I strongly believe** that these cells have the ability to repair at the damage cells. (Medicine)

Furthermore, engineering and medicine presenters employ more attitude markers than those from other disciplines ($LL = 14.32$, $p < 0.01$; $LL = 8.66$, $p < 0.01$). As discussed above, this option of rhetorical resources expresses authors' affective feelings to their propositions, striking a chord with the audience, and thus the propositions with such a personal slant can add to the persuasive force of knowledge claims (Di Scotto Carlo, 2015). Examples (9) and (10) are typical in the presentations in medicine and engineering. The presenters make a more frequent use of attitudinal evaluations to impress the audience with their research findings as "glamorizing material" (Hyland, 2010, p. 124), emphasising their value on social well-being.

(9) But these stem cells are **amazing** because they have the most **amazing** ability to repair damaged cells. And the more **important** thing is you can get these stem cells from your body, such as bone marrow, fatty issues, muscles, etc. (Medicine)
(10) **Fortunately**, based on our experiments, we found utilizing ammonia solution to treat it up at the sub hydra-X side can **remarkably** transfer phosphorus into X which is a **good** slow relieving fertilizer. (Engineering)

It is also interesting to note that the majority of the attitude markers used by the engineering and medical presenters are either what are called "importance markers" (Deroey, 2015), which overtly mark the importance, relevance, or significance of points that are presented (e.g., *important*, *essential*), or "surprise markers" (Hu & Chen, 2019), which express surprise against readers' prior knowledge (e.g., *surprising*, *astonishing*). In contrast, we found attitudinal markers, *poor* and *effective*, more often in the presentations in sciences ($LL = 7.78$, $p < 0.05$, $\%DIFF = 165.79$; $LL = 7.15$, $p < 0.05$, $\%DIFF = 136.26$). Full reasons for this difference of stance choices are unknown, but we cannot overlook the suasive effect of intriguing the non-specialist audience with the news value of a research project which has a tangible bearing on social lives. As shown in the following examples, the presenters seek to foreground what is found important and novel in their projects when communicating scientific knowledge to a wide audience.

(11) Even more **important** is that this data generator can **essentially** open up a new research and clinical direction for data-driven biomedicine … (Engineering)
(12) So the most **surprising** information is that the cells originated from the notochord, the primitive structure where your intervertebral body developed from far before your birth. (Medicine)
(13) eventually the overall efficiency of the device would become **poor** and **poor.** In my research, I revealed the picture of how D Phi atoms could. It also suggests an **effective** way to improve the efficiency. (Science)

Table 3
The distribution of stance markers across disciplines (per 1000 words).

Features	Science	Engineering	Medicine	Hard field	Arts	Education	Social Science	Soft field
Self mentions	21.8	19.3	31.0	**25.1**	15.4	22.6	27.2	**21.1**
Attitude markers	11.1	15.7	13.3	**13.3**	10.5	11.0	7.6	**9.6**
Hedges	8.1	8.8	9.3	**8.9**	9.6	11.0	11.3	**10.5**
Boosters	7.3	5.2	6.9	**6.7**	5.2	3.8	6.7	**5.4**
Stance	**48.3**	**49.0**	**60.5**	**54.0**	**40.7**	**48.4**	**52.8**	**46.6**

This rhetorical foregrounding of news value largely lines up with the experiential pragmatism prioritised in such applied disciplines as engineering and medicine, which accrue the value of knowledge claims with a practical rather than theoretical orientation and thus strengthen the public understanding of scientific designs by an explanatory qualification about how much the "co-existing but competing paradigms" are applicable to real world problems (Parry, 1998, p. 297). Relatively, pure scientific disciplines such as physics and mathematics, which are institutionally labelled as 'sciences' at the 3MT holding university, build knowledge on theoretical improvement from previous discoveries.

Table 3 also shows that this rhetorical feature is generally more frequent in medicine. It is a scientific field with a stronger orientation on human service probably than the other disciplines, aiming to prevent illness, relieve suffering and find cures. Its professional focus is on the real world concerns related to life and death situations, so medical researchers see it as a first priority to "inquire into all aspects of human life and human values, especially as they are played out in the universal human experiences of health, disease, dying, and death" (Carson & Burns, 2002, p. 5). Therefore, it is important for the speakers in medical sciences to explicitly emphasise to laymen "its application, its usefulness and the effects" of the products of their research have "upon people's lives" (Calsamiglia, 2003, p. 140). As seen in (14) and (15), a strong projection of personal voices can reinforce the communication between the world of scientific rationality and the world of common experience, and establish the uniqueness, relevance and immediacy of topics which might not seem to warrant lay attention by making information concrete, novel and accessible (Hyland, 2010).

(14) this is a **very** delicate balance, **easy** to disrupt. So it's **really** not for **good** for them to be trapped in this life of treatment. It's **possible** and it's **best** for them to get a new pancreas. Therefore, in **my** research with the help of ultrasound, **I**'ve discovered that … (Medicine)

(15) **My** study finds that the cells descent from the notochord far before our birth is **in fact important** for the maintenance of our intervertebral disc. More **importantly**, it tells the possibility of preventing … (Medicine)

Furthermore, self mention presents a strong and interesting medical disciplinarity. This stance option includes the use of first person pronouns and possessive adjectives (Hyland, 2005), indicating how academics stand in relation to their argument, discipline and audience. A further scrutiny of the linguistic forms shows that exclusive plural forms of first person pronouns (*we*, *our* and *us*) are used far more often in medicine ($LL = 39.56$, $p < 0.001$), although singular forms dominate in all disciplines. Table 4 presents a detailed disciplinary distribution of the normed frequency.

Hyland (2002a) argues that plural meaning allows a rhetorical distance between academics and claims, reducing their personal intrusion, but we consider the more frequent plural forms of self mention in medicine as a possible consequence of the regularity of team-based collaborative work. Medical research typically entails a long-term investment of human, monetary and experimental resources, and as Bozeman and Boardman (2014) report, team collaboration and professional interaction in medical sciences are the golden guarantee of research projects, even a pilot and doctoral one. Hence we find it meaningful to see such a frequent use of plural forms in medicine, either to profile how research is conducted (16) or to demonstrate what is found in the research (17).

(16) And here is **our** experiments. So as always, **we** begin with human, so **we** collect about hundreds of liver tumors and **we** perform a specific staining to visualize these macrophages. (Medicine)

(17) In animal level, **we** find acacetin can be quite effective in inhibiting atrial fibrillation in mammal animals. Then **we** find it can specifically inhibit the potential channels in these heart cells. (Medicine)

6. "Imagine you've lived your whole life in Hong Kong": listener engagement in 3MT presentations

1207 engagement markers were found in the 3MT presentations, averaging 36.9 cases per 1000 words and 15.1 cases every presentation, and this is a lower frequency than stance expressions by 28.2% ($LL = 64.92$, $p < 0.001$, $\%DIFF = -26.43$). This difference suggests that the less assured composition of audience may reduce the presenters' confidence in frequently engaging listeners overtly. As seen in Table 5 below, listener mention by second person pronouns and inclusive *we* is the most frequently used marker of listener-oriented interactional resources in the 3MT presentations, accounting for over 60% of the engagement strategies. Although these features characterise conversational intimacy, we see them playing a more important role in the 3MT presentations where listeners are normally outside a disciplinary medium and framework of assured knowledge. Forms such as inclusive *we* evoke a sense of shared understandings and rapport between presenters and

Table 4
Normed frequency of self mentions across disciplines (per 1000 words).

Forms	Science	Engineering	Medicine	Arts	Education	Social Science
I/my/me	17.4	16.7	20.9	13.9	20.5	24.0
we/our/us	4.4	4.9	8.3	1.5	2.1	3.2

Table 5
Frequency of engagement markers in the 3MT corpus.

Category		Per 1000 words	Standard deviation	%
Engagement	Listener mentions	23.16	3.1	62.71
	Questions	5.93	0.8	16.06
	Directives	5.88	0.8	15.92
	Appeals to knowledge	1.96	0.4	5.31
	Total	**36.93**	**5.0**	**100.00**

audience, building up a co-operative ethos (18), while second personal pronouns relate to listeners as someone much like the presenter, who are able to perceive the usefulness of research outputs, and thus create emotional proximity (19).

(18) That's why **we** have this left side bias for faces. Similarly, for Chinese characters, no matter whether **we** can write or not, **we** also have this left side bias for Chinese characters, just like faces. (Social Sciences)
(19) It functions to act as a cushion to support **your** weight and allow flexibility for **your** bending. So even if **you** are so unlucky to have that pain, don't worry, we have the solution. (Medicine)

In addition, other patterns of second person pronouns were also found, including establishing a common ground with the audience (e.g., *have you ever experienced … ?*), appealing to their daily experience (e.g., *how do you look at faces?*), addressing them as an everyman researcher (e.g., *to make a pancreatic cell, you have to grow it from different stages …*), and recommending actions to take (e.g., *And next time, when you go to a seafood restaurant, just be cautious …*).

Table 5 also shows that appeals to audience's background knowledge is rarely used as a way to bring listeners in discourse. This engagement device is based on speakers' understanding and positioning of listeners "within the apparently naturalized and unproblematic boundaries of disciplinary understandings" (Hyland, 2001, p. 566), so it is expected to appear frequently in academic speeches. In 3MT presentations, however, presenters address a heterogenous make-up of unspecified audience, and may not be assured of how much background knowledge they can summon from the audience. Therefore, it is far less common to make such an appeal to tacit knowledge within a discipline (20) and (21) than address listeners directly (18) and (19). This finding indicates a different yet perhaps more complicated rhetorical context than regular academic speeches such as peer seminars (Aguilar, 2016) and dissertation defences (Lin, 2017).

(20) Compared with **traditional** methods, robots with our methodology are more sensitive and react faster to their surrounding environments.(Engineering)
(21) Now coming back to the question of whether to cheese or not to cheese. **Obviously**, it's because low salt food products were able to improve the growth of the probiotic bacteria. (Science)

Looking for the disciplinary variation in engagement strategies, we find it captivating that different from stance resources, there is no significant difference in the total of normed frequency between hard and soft knowledge fields ($LL = 1.82$, $p > 0.05$, $\%DIFF = 8.52$). Table 6 shows the distribution of engagement markers across disciplines.

While generally less frequent than stance expression, engagement strategies overwhelmingly consist of a direct mention of listeners in all disciplines, which is a default interactional option in spoken communication (Biber et al., 1999; Yang, 2014). Therefore, the uneven disciplinary difference in the total use of stance and engagement in 3MT presentations indicates that the particular rhetorical context of promoting specialised knowledge to a heterogeneous cohort of listeners could add to our understanding of the interactional choices which are typically examined in written texts (Hyland, 2005).

Despite no significant disciplinary difference in the total cases of listener engagement, disciplinarity in sub-categories is still identified and worthy of our attention. Hard sciences use more directives (4.8 vs 3.1 cases per 1000 words, $LL = 5.5$, $p < 0.05$, $\%DIFF = 54.84$) while more questions are posed by presenters in soft sciences (5.4 vs 7.5 cases per 1000 words, $LL = 7.9$, $p < 0.01$, %DIFF = 28.00). We elaborate on the use of these two engagement devices below, exploring the connection between the use of the rhetorical features and disciplinary knowledge production as well as how this production is recontextualised in 3MT presentations.

Table 6
The distribution of engagement markers across disciplines (per 1000 words).

Features	Science	Engineering	Medicine	Hard field	Arts	Education	Social Science	Soft field
Listener mentions	26.3	22.2	25.3	**25.0**	15.9	28.6	20.8	**22.1**
Questions	6.3	5.2	4.5	**5.4**	6.3	8.8	7.0	**7.5**
Directives	2.8	5.4	2.9	**4.8**	2.3	2.9	3.4	**3.1**
Appeals to knowledge	1.6	1.2	2.0	**1.7**	1.6	1.4	1.2	**1.4**
Total	**39.2**	**37.2**	**37.1**	**38.2**	**27.2**	**46.1**	**35.1**	**35.2**

Directives are typically used to instruct the audience to perform an action or follow the presenter's views to see things (Hyland, 2005), including imperatives (e.g., *remember*, *note*, *imagine*), modal obligations (e.g., *must*, *should*, *ought*), first person inclusive let-imperatives (e.g., *let's*), and predictive adjectives expressing the presenter's necessity/importance (e.g., *It is important to …*). A further sweep at the directive forms used in the disciplinary corpus shows that there are more cases of imperatives used in the hard domains (22) and (23), with more of modals in the soft fields (24) and (25). Table 7 summarises the disciplinary distribution.

(22) **Imagine** you were looking at two galaxies through a telescope. (Science)
(23) **Remember** the water-based fluid has very flexible surface. Even under a tiny vibration, the fluid feels like experiencing and of quick. (Engineering)
(24) we **need to** consider the fact that Hong Kong does not allow same-sex marriage or assisted reproductive technology for same-sex couples. (Social Sciences)
(25) We **should** develop a more appropriate strategy for education, and to foster a more positive sexual attitude and sexual development for our youth and the society as a whole. (Education)

Additionally, it is also interesting to note the directive acts requested by the 3MT presenters. According to Hyland (2005), directives are mainly used to engage addressees into three kinds of activity: *textual acts* which guide them through the discussion (26), *cognitive acts* which steer them through a line of reasoning (27), and *physical acts* which instruct them to carry out research processes or perform some actions in the real world (28).

(26) **You can see** that the green label cells are separating from each other as if they are no longer friends. (Medicine)
(27) **Imagine** you've lived your whole life in Hong Kong, but are constantly being asked to explain your food, your language, even the weather in your country, meeting India, Nepal or Pakistan. (Arts)
(28) First, **let's** have our hand on the left chest. (Medicine)

In Hyland's (2005) study, less surprisingly, because of disciplinary reporting of reality, over 80 percent of physical acts occurred in science texts in contrast to textual and cognitive directives which were used more often in the arts and humanities. Different from the research writing, however, we found in 3MT presentations that engineering presenters used mostly cognitive and textual directives while social scientists had the highest proportion of physical acts. Table 8 presents a more detailed distribution of directive acts across disciplines.

Rather than simply applying the exact and natural sciences to the reality of practice, engineering is also considered as a "designerly" way of thinking and arguing about "the eminently social nature of the world they act upon" (Figueiredo, 2008, p. 94). This social dimension requires engineers not only to stress the merit of logics and rigour, seeing knowledge as produced through analysis and experimentation, but also to create social and economic value and the belief in the satisfaction of end users. Therefore, this may suggest the way that the presenters convey to the general audience as potential end users the efficacy of engineering designs by directing them to notice the material feature which justifies a design (29) or pointing them to the rationale behind for a design (30).

(29) **Remember** the water-based fluid has very flexible surface. (Engineering)
(30) **Let's look at** the origins of some supplementary cementitious material here. (Engineering)

Physical acts are frequently used when the presenters in social sciences conclude presentations and recommend actions to perform based on what have been presented as in (31) and (32). This seems an essential component of social science research, which aims at appeals to either governments and authorities or the general public to take actions in response to economic, educational and political problems in society. Addressing to a wide audience, social scientist presenters may feel the need to accentuate the social bearing of their research by the frequent use of physical acts.

(31) We **should develop** a more appropriate strategy for education, and to foster a more positive sexual attitude and sexual development for our youth and the society as a whole. (Social Science)
(32) **It is very important to turn** otherwise useless roofs into an antidote for our city's rainwater problem. (Social Science)

Table 7
Distribution of patterns of directives across disciplines (per 1000 words).

Features	Science	Engineering	Medicine	Arts	Education	Social Science
modals	1.0	1.6	0.9	1.2	1.7	1.5
imperatives	1.6	2.5	1.8	0.9	1.3	1.4
let's/let us	0.2	1.3	0.2	0.0	0.0	0.3
adj. to v	0.0	0.0	0.0	0.2	0.0	0.3

Table 8
Distributions of directive acts across disciplines (per 1000 words).

Features	Science	Engineering	Medicine	Arts	Education	Social Science
cognitive	0.76	2.52	0.59	0.82	1.43	0.99
textual	0.56	1.59	1.07	1.26	0.42	0.72
physical	1.31	0.73	0.69	0.24	1.08	1.72

Turning to questions, they are the strategy of dialogic involvement par excellence, directly inviting the audience to enter the frame of discourse, where they can be led to the speaker's viewpoint (Hyland, 2002b). As shown above, questions are asked more frequently in the 3MT presentations of soft disciplines. Concurring with Thompson's (1998) argument that questions seem essential to invite collusion with audience, especially on controversial topics, we see this higher frequency related to the more complex and fluid nature of knowledge in the arts and social sciences. It typically encompasses more diverse perspectives and interpretations than that in hard domains, comprising a more direct debate and bearing on people's daily life, so presenters exploit such a rhetorical query to lead audience to their point of view and seek for a front-loaded experiential sympathy at the outset (33) and (34).

(33) Vocabulary is especially important for young children. Why? Because when they can't even master the most basic words, how can they move on to learn more advanced language skills? In my research, I look at two contexts for the teaching and learning of English vocabulary among young children in Hong Kong home and the school. (Education)
(34) How many of you have given money to disaster victims? Did you ever ask yourself why? Are there countries that you would never give it? When giving, do you ever expect something in return? These are the core questions of my research. (Social Science)

7. Some observations and conclusions

We have shown in this study that 3MT presenters employ a vast range of interactional features to explicitly express an authorial stance while engaging and involving listeners. Unlike research writing, 3MT presentations address an immediate audience, and this conversational character justifies a highly frequent use of first and second person pronouns in the presentations. 3MT presentations also differ from other spoken academic genres such as peer seminars and conference presentations since they are directed to a disciplinary heterogeneous listenership, which compromises the presenters' certainty about how much they could directly engage listeners through the discourse. Presenters are thus found to exploit stance expressions more often than engagement devices, and attempt to summon the audience's background knowledge to the least extent.

Furthermore, we have also observed a close bond between the use of interactional resources and disciplinary propositional content. Hard sciences make more use of stance expressions, especially attitude markers which highlight the importance and surprise value of research findings, because research subjects in sciences are typically abstract beyond a common sense of nature and this heightened persuasive interaction oils the wheels of communicating scientific knowledge to a wide audience. In contrast, the fluid and disputable nature of soft knowledge necessitates dialogic involvement, so presenters in the soft disciplines posed more rhetorical questions. Therefore, 3MT presentations show us how students understand their disciplinary knowledge and its connection with non-professional audience and how they adapt their discourse accordingly.

Therefore, although commonly seen as a competition event, 3MT presentations function as a useful platform to train research students' ability to communicate disciplinary knowledge in a language appropriate to a diverse audience. This ability gains an increasing importance in today's academic context of scientific knowledge production and transmission. It involves a trend towards diversified forms of knowledge exchange in the way academic research is carried out and reported. Clearly, in this capricious and market-driven landscape, research postgraduate students have to grapple with the challenges of communicating disciplinary knowledge "in a diversity of ways with a diversity of people as they develop their academic literacies" (Starfield & Paltridge, 2019, p. 2). As seen in the study, what need to be recontextualised in the popularisation of science are not only specialist knowledge but also different aspects of linguistic expressions and rhetorical practice. Therefore, it is suggested that popularising activities such as 3MT presentations be factored into the genre constellation of postgraduate education in order to equip young researchers with the skillset and rhetorical dexterity they may need for coping with various genres and audiences in their future professional careers.

Perhaps a more immediate pedagogical application of this study is that the stance and engagement expressions provide practical and achievable strategies for honing students' presentations to maximise the impact on a wide audience. However, it is fruitful for future research to explore non-textual features and conversational implicature such as hesitation and filled pause which are typically used in 3MT presentations since they are also important materials for the teaching of English as a second language about how to prepare academic speeches and engage audience.

7.1. Notes

1. Accessed by https://www.ke.hku.hk/hku3mt/index.php/about-3mt/about-the-competition on 20 February 2020.
2. Accessed by https://threeminutethesis.uq.edu.au/resources/judging-criteria on 25 February 2020.
3. Accessed by http://ucrel.lancs.ac.uk/llwizard.html on 25 February 2020.

CRediT authorship contribution statement

Xuyan Qiu: Conceptualization, Data curation, Validation, Writing - review & editing. **Feng (Kevin) Jiang:** Methodology, Formal analysis, Funding acquisition, Writing - original draft.

Acknowledgments

This study was supported by the Research Project of Social Sciences in Jilin Province (2019B163) and the Grant for Young Researchers in Social Sciences by Jilin University (2019FRLX04).

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jeap.2021.100976.

References

Aguilar, M. (2016). Seminars. In K. Hyland, & P. Shaw (Eds.), *Routledge handbooks in applied linguistics. The Routledge handbook of English for academic purposes* (pp. 359–371). London: Routledge.
Anthony, L. (2014). *TagAnt 1.2.0*. Tokyo, Japan: Waseda University. Retrieved from http://www.antlab.sci.waseda.ac.jp.
Anthony, L. (2019). *AntConc 3.5.8*. Tokyo, Japan: Waseda University. Retrieved from http://www.antlab.sci.waseda.ac.jp.
Aull, L. L., & Lancaster, Z. (2014). Linguistic markers of stance in early and advanced academic writing. *Written Communication, 31*(2), 151–183.
Bamford, J. (2014). Rendering the dismal science more lively: Popularizing Economics in English and Italian. In G. Bongo, & G. Caliendo (Eds.), *The language of popularization: Theoretical and descriptive models* (pp. 23–50). Peter Lang: Bern.
Bandler, J. W., & Kiley, E. M. (2018). Moving forward with clarity: The second IMS 3MT competition. *IEEE Microwave Magazine, 19*(3), 59–67.
Becher, T., & Trowler, P. (2001). *Academic tribes and territories: Intellectual enquiry and the culture of disciplines* (2nd ed.). Philadelphia PA: Open University Press.
Berkenkotter, C., & Huckin, T. N. (1995). *Genre knowledge in disciplinary communication: Cognition, culture, power*. Hillsdale N.J.: L. Erlbaum Associates.
Biber, D. (2006). Stance in spoken and written university registers. *Journal of English for Academic Purposes, 5*(2), 97–116.
Biber, D., Johansson, S., Leech, G., Conrad, S., & Finegan, E. (1999). *Longman grammar of spoken and written English*. Harlow: Longman.
Boldt, H. (2019). *The Three Minute Thesis in the Classroom: What every ESL teacher needs to know*. Ann Arbor: The University of Michigan Press.
Bozeman, B., & Boardman, C. (2014). *Research collaboration and team science*. Cham: Springer International Publishing.
Calsamiglia, H. (2003). Popularization discourse. *Discourse Studies, 5*(2), 139–146.
Carson, R. A., & Burns, C. R. (2002). *Philosophy of medicine and bioethics: A twenty-year retrospective and critical appraisal*. Dordrecht: Kluwer Academic Publishers.
Carter-Thomas, S., & Rowley-Jolivet, E. (2020). Three minute thesis presentations: Recontextualisation strategies in doctoral research. *Journal of English for Academic Purposes*.
Copeman, P. (2015). Three Minute Theatre: Principles and practice for scripting and performing Three Minute Thesis presentations. *International Journal for Research Development, 6*(1), 77–92.
Crosthwaite, P., Boynton, S., & Cole, S. (2017). Exploring rater conceptions of academic stance and engagement during group tutorial discussion assessment. *Journal of English for Academic Purposes, 28*, 1–13.
Deroey, K. L. B. (2015). Marking importance in lectures: Interactive and textual orientation. *Applied Linguistics, 36*(1), 51–72.
Di Scotto Carlo, G. (2015). Stance in TED talks: Strategic use of subjective adjectives in online popularisation. *Iberica, 29*, 201–222.
Feak, C. B. (2013). ESP and speaking. In B. Paltridge, & S. Starfield (Eds.), *The handbook of English for specific purposes* (pp. 35–53). Malden, MA: John Wiley & Sons.
Figueiredo, A. D.d. (2008). Toward and epistemology of engineering. In D. E. Goldberg, & N. McCarthy (Eds.), *Proceedings workshop on philosophy & engineering (WPE 2008)* (pp. 94–95). London: Royal Engineering Academy.
Gabrielatos, C. (2018). Keyness analysis: Nature, metrics and techniques. In C. Taylor, & A. Marchi (Eds.), *Corpus approaches to discourse: A critical review* (pp. 225–258). London: Routledge.
Guest, M. (2018). *Conferencing and presentation English for young academics*. Singapore: Springer.
Hu, G., & Chen, L. (2019). "To our great surprise …": A frame-based analysis of surprise markers in research articles. *Journal of Pragmatics, 143*, 156–168.
Hu, G., & Liu, Y. (2018). Three minute thesis presentations as an academic genre: A cross-disciplinary study of genre moves. *Journal of English for Academic Purposes, 35*, 16–30.
Hunston, S., & Thompson, G. (Eds.). (2000). *Evaluation in Text: Authorial stance and the construction of discourse*. Oxford: Oxford University Press.
Hyland, K. (1998). Persuasion and context: The pragmatics of academic metadiscourse. *Journal of Pragmatics, 30*(4), 437–455.
Hyland, K. (2001). Bringing in the reader: Addressee features in academic articles. *Written Communication, 18*(4), 549–574.
Hyland, K. (2002a). Authority and invisibility: Authorial identity in academic writing. *Journal of Pragmatics, 34*(8), 1091–1112.
Hyland, K. (2002b). What do they mean?: Questions in academic writing. *Text, 22*(4), 529–557.
Hyland, K. (2004). *Disciplinary discourses: Social interactions in academic writing*. Ann Arbor: University of Michigan Press.
Hyland, K. (2005). Stance and engagement: A model of interaction in academic discourse. *Discourse Studies, 7*(2), 173–192.
Hyland, K. (2010). Constructing proximity: Relating to readers in popular and professional science. *Journal of English for Academic Purposes, 9*(2), 116–127.
Hyland, K., & Guinda, C. S. (Eds.). (2012). *Stance and voice in written academic genres*. Basingstoke: Palgrave Macmillan.
Hyland, K., & Jiang, F. K. (2016). Change of attitude? A diachronic study of stance. *Written Communication, 33*(3), 251–274.
Hyland, K., & Jiang, F. K. (2019). *Academic discourse and global publishing: Disciplinary persuasion in changing times*. London: Routledge.
Jiang, F. K. (2017). Stance and voice in academic writing: The "noun+that" construction and disciplinary variation. *International Journal of Corpus Linguistics, 22*(1), 85–106.
Jiang, F. K., & Ma, X. (2018). 'As we can see': Reader engagement in PhD candidature confirmation reports. *Journal of English for Academic Purposes, 35*, 1–15.

Kolb, D. A. (1981). Learning styles and disciplinary differences. In A. W. Chickering (Ed.), *The modern American college: Responding to the new realities of diverse students and a changing society* (pp. 232–255). San Francisco, California: Jossey-Bass.
Kuteeva, M., & Mauranen, A. (2018). Digital academic discourse: Texts and contexts. *Discourse. Context & Media, 24*, 1–7.
Lin, C.-Y. (2017). "I see absolutely nothing wrong with that in fact I think …": Functions of modifiers in shaping dynamic relationships in dissertation defenses. *Journal of English for Academic Purposes, 28*, 14–24.
Martin, J. R., & White, P. R. R. (2005). *The language of evaluation: Appraisal in English*. Basingstoke: Palgrave Macmillan.
Mauranen, A. (2002). "A good question": Expressing evaluation in academic speech. In G. Cortese, & P. Riley (Eds.), *Domain-specific English: Textual practices across communities and classrooms* (pp. 115–140). Frankfurt: Peter Lang.
Parry, S. (1998). Disciplinary discourse in doctoral theses. *Higher Education, 36*(3), 273–299.
Poos, D., & Simpson, R. (2002). Cross-disciplinary comparisons of hedging: Some findings from the Michigan corpus of academic spoken English. In R. Reppen, S. M. Fitzmaurice, & D. Biber (Eds.), *Using corpora to explore linguistic variation* (pp. 3–24). Amsterdam: John Benjamins.
Qiu, X., & Ma, X. (2019). Disciplinary enculturation and authorial stance: Comparison of stance features among master's dissertations, doctoral theses, and research articles. *Iberica, 38*, 327–348.
Rowley-Jolivet, E., & Carter-Thomas, S. (2005). The rhetoric of conference presentation introductions: Context, argument and interaction. *International Journal of Applied Linguistics, 15*(1), 45–70.
Shaikh-Lesko, R. (2014). *Science speak*. The Scientist. August.
Starfield, S., & Paltridge, B. (2019). Thesis and dissertation writing in a second language: Context, identity, genre. *Journal of Second Language Writing, 43*, 1–3.
Sugimoto, C. R., & Thelwall, M. (2013). Scholars on soap boxes: Science communication and dissemination in TED videos. *Journal of the American Society for Information Science and Technology, 64*(4), 663–674.
Thompson, S. (1998). Why ask questions in monologue? Language choice at work in scientific and linguistic talk. In S. Hunston (Ed.), *Language at work: Selected papers from the annual meeting of the British association for applied linguistics held at the university of birmingham* (pp. 137–150). September: Clevedon: Multilingual Matters.
Yang, W. (2014). Stance and engagement: A corpus-based analysis of academic spoken discourse across science domains. *Language for Specific Purposes, 5*(1), 62–78.

Xuyan Qiu is currently a research assistant professor at School of Education and Languages of the Open University of Hong Kong. Her research interests include English for academic purposes and second language acquisition.

Feng (Kevin) Jiang is Kuang Yaming Distinguished Professor in applied linguistics in the School of Foreign Language Education at Jilin University, China and gained his PhD under the supervision of Professor Ken Hyland at the University of Hong Kong. His research interests include disciplinary discourse, corpus studies and academic writing, and his publications have appeared in most major applied linguistics journals.