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International Graduate Student PowerPoint Presentation Designs: A Reality Check

Alla Zareva
Old Dominion University, azareva@odu.edu

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Alla Zareva, Old Dominion University

Abstract: The present study set out to examine what novice international graduate student presenters consider to be effective PowerPoint slide design practices and the extent to which these practices are in agreement with experts' advice. The analysis focused on three main features of students' PowerPoint presentations – organisation, style and typography. The general conclusion is that we can mostly rely on students' intuitions concerning 'relevance' and 'simplicity' of PowerPoint presentation designs, but we should draw their attention to 'consistency', i.e., the systematic application of the organisation, style and typological features to their PowerPoint presentations.

Keywords: PowerPoint; academic presentations; international graduate students' oral discourse; learning; innovation.

1 Introduction

PowerPoint presentations have become a prevalent form of multimedia presentations, particularly, in higher education (Apperson et al., 2008; Basturk, 2008). Students prefer them to presentations made from transparencies and some studies have indicated that, generally, students believe that the use of PowerPoint enhances their classroom experience and facilitates their learning (e.g., Amare, 2006; Apperson et al., 2006, 2008; Beets and Lobingier, 2001). Expert advice about effective PowerPoint practices comes from both academic and industry sources. There is also an attempt not only to develop PowerPoint 'how-to' manuals and websites but also to investigate users' attitudes and the effectiveness of PowerPoint presentations in relation to experts' advise. However, in reading the literature on the topic, one cannot but notice that the 'buzz' word authors of

Corresponding author e-mail address: azareva@odu.edu

PowerPoint manuals and tips use to refer to recommended PowerPoint presentation design practices is 'effective', yet what 'effectiveness' means in measurable terms has rarely, if ever, been discussed. As a consequence, in addition to the general paucity of research that informs the effective use of presentation software, textbook authors and manual writers often try to fill the vacuum of empirically tested practices with prescriptive rules or guidelines that do not have much of theoretical grounding, though some may sound intuitively logical (Katt et al., 2008).

Most of today's incoming university students are accustomed to learning in multimedia environments (Mahar et al., 2009) and strongly encouraged to use software tools in designing their presentations. However, when it comes to international students entering graduate programmes at US universities, the expectation that they have received sufficient and/or consistent training in PowerPoint presentation design may not be realistic. Nonetheless, most instructors who include presentations as a graded component in their syllabi and advise their students to use PowerPoint for their presentations do not actually discuss the features they would recommend to be applied to the slide designs. Neither, to my knowledge, has the reality of student prepared PowerPoint presentations ever been examined in any language context – be it students' native or second language – so that we have some empirical evidence for the extent to which students' intuitions about what they consider to be 'effective' practices of PowerPoint slide design match experts' advice. Knowing more about international students' practices of using PowerPoint software would allow us to better target our efforts at assisting those students with needs they may have but are unaware of and, thus, remain largely overlooked. Moreover, as Duarte (2008) has rightly pointed out, effective visual expression is neither easy nor natural, which further underscores the need for an in-depth analysis of the features of students' PowerPoint presentation designs that contribute (or not) to the effectiveness of the presentation as a whole, above and beyond its content.

It is quite ironical that PowerPoint is the most widely criticised presentation design tool (e.g., Craig and Amernic, 2006; Cyphert, 2004; Nunberg, 1999; Tufte, 2003; etc.), while at the same time, it is the most widely used presentation design software (Craig and Amernic, 2006). One of the most common criticisms is that presentations using PowerPoint have become overly predictable and generic and, as a result, most presentations look and feel the same (Alley and Neeley, 2005). As far as I have been able to observe, predictability and genericness do not seem to be features that are necessarily frowned upon in academic and scientific contexts when used meaningfully. After all, predictability and genericness largely govern academic and scientific writing and it is only logical to expect that they can easily find their way into the PowerPoint presentation designs. However, instead of blaming the software for the outcomes, we need to uncover the features that seem most appealing to students in designing their PowerPoint presentation slides and find out how they compare to professional advice, coming from seasoned presenters and communicators. This will give us better insights into the way student presenters use technology to facilitate their discussion of complex content and their attempts to send a clearer message across. As much as PowerPoint is criticised, it is here to stay (Katt et al., 2008) and, instead of pointing a finger at the tool, we need to accept that 'what comes out of PowerPoint depends largely on what goes into it' [Doumont, (2005), p.69].

2 Literature review: experts' advice about effective properties of PowerPoint presentation slides

'Experts advice' is taken to refer in this paper to recommendations about PowerPoint presentation design coming from instructors, communication and technology experts who are actively using PowerPoint in their classroom practices and/or are publicly involved in training PowerPoint design and presentation skills. A great number of such experts have detailed in publications of different length what they see as the most effective properties of presentation graphics designs that PowerPoint users need to know and apply to their presentation designs. What distinguishes slides from other written documents is that slides are viewed while a presenter is speaking, which suggests that if they are meant to facilitate the audience' comprehension of the presented material, they should have certain features that would allow the audience members to do so while listening to a presenter. In that sense, anything that, in Doumont's (2002) terminology, creates 'noise' in the written document can potentially distract the attention of the audience from the message. 'Noise' in the PowerPoint slides can come from the text (e.g., inconsistent wording of paragraphs, complicated long sentences, spelling errors, etc.), from the slide layout (e.g., unclear structure, inconsistent typography, difficult to read fonts, etc.), from the illustrations (e.g., unrelated to the content illustrations, too many details on schematics, inconsistent tables, etc.) and other sources. As Doumont (2002) has rightfully pointed out, recognising that nothing is neutral, PowerPoint presenters should plan wisely everything they include in their presentation slides. Thus, the key to designing powerful PowerPoints seems to be linked to three characteristics – relevance, consistency and simplicity applied to the organisation, style and typography of the slide designs.

In what follows, I am going to summarise the most common recommendations about designing PowerPoint slides as given by the experts (see Table 1). The summary does not provide an extensive list of all recommended PowerPoint design features the experts consider 'effective' as it is limited to the ones that will be investigated in the study. However, it is comprehensive enough to include the critical features one would frequently come across in most PowerPoint presentations, which deserve our attention.

The main goal of the present study is to examine to what extent experts' advice, as summarised in Table 1, is accommodated in international graduate students' PowerPoint presentations. Each feature (organisation, style and typography) is examined quantitatively and qualitatively. The study is limited to international students' PowerPoint presentations for several reasons: first, the international student body, particularly in graduate student programmes, is constantly growing all over the world as more and more students are seeking masters and doctoral degrees from programmes that excel in certain areas of expertise. Second, unlike local students, what describes the international student body best is the diversity of educational experiences these students have gone through in their native countries which, at the same time, makes it difficult to predict their level of knowledge, experience, and skills in certain non-dominant areas of expertise – in this case, PowerPoint. As a matter of fact, most of the participants in this study consistently reported that they had no previous training and very little experience with using PowerPoint for presentation design purposes, in addition to having little previous experience with presenting itself. Finally, many North American universities,

for instance, offer oral communication courses for newly admitted international students, which are usually mandatory for students holding teaching assistantships but are also open to free enrolment of other international students who may want to improve their academically-oriented oral communication in English. Thus, knowing more about international students' PowerPoint presentation design strengths and weaknesses will allow English for academic purposes (EAP) programmes or oral communication programmes to target their efforts more efficiently toward graduate students' needs by making them aware of the presentation design features that are highly recommended, which they may, however, unknowingly overlook.

Table 1 Summary of experts' advice about some critical features of PowerPoint slide design

Organisation features of presentation designs
• Say things more than once by including a preview that outlines the upcoming structure and a conclusion that recaps the main points (Alley and Neeley, 2005; Doumont, 2002).
Style features of slide designs
General recommendations
• Avoid 'bells and whistles' and do not overuse the special effects (colour, motion and sound) (Donohue, 2009; Maxwell, 2007).
• The use of any special effects should be purposeful (Duarte, 2008; Holzl, 1997).
• Be consistent and limit the number of fonts, colours, backgrounds and effects for clarity and readability (Donohue, 2009; Duarte, 2008; Ulrich and Willett, 1998).
Colour
• The colours used for text and the background should be in contrast (Donohue, 2009; Duarte, 2008; Ulrich and Willett, 1998).
• Use colours sparingly – for example, one colour for titles and another for text (Donohue, 2009; Ulrich and Willett, 1998).
• Use solid colour backgrounds behind text (Donohue, 2009).
• Use solid colours for filling in charts and tables (Donohue, 2009).
Motion
• Use motion to emphasise key points, for slide transition and for 'building' slides (revealing the slide content line by line during a presentation) (Donohue, 2009; Duarte, 2008; Holzl, 1997; Reynolds, 2005).
• Otherwise, use the 'appear' option (Maxwell, 2007; Paradi, 2003).
• Use 'natural transitions', meaning transitions that drop text down from the top of the slide or enter it in from the left, as these are directions of movement that improve readability (Donohue, 2009).
• Avoid using text that moves onto the screen in any way, such as flying in, spiral or zooming, as it is harder to read for the audience (Paradi, 2003).
Graphics
• Graphics should be relevant to and enhance the meaning of the text (Donohue, 2009; Duarte, 2008; Holzl, 1997) and should not be used for decorative purposes (Manning and Amare, 2006).
• Limit the number of images or graphics on each slide (Donohue, 2009).
• Keep diagrams, charts and graphs simple (Donohue, 2009).

Table 1 Summary of experts' advice about some critical features of PowerPoint slide design (continued)

Style features of slide designs
Headlines
• For every slide, but the title slide, use a sentence headline that states the slide's main assertion (Alley and Neeley, 2005).
Text
• Effective slides convey messages clearly and accurately, yet they are visually concise (Donohue, 2009; Doumont, 2005; Ulrich and Willett, 1998).
• Use examples after concepts that have been presented to facilitate recall and tie new to old knowledge to enhance recall (Seaman, 1998).
• Slides should almost always include some text, stated as short complete sentences (Doumont, 2005; Gross and Harmon, 2009).
• Beyond the text statement, the message should be developed visually (Alley and Neeley, 2005; Doumont, 2005; Harris, 2009).
• A slide should be able to stand on its own (Doumont, 2005).
• Avoid bulleted lists that do not show the connections among the listed items (Alley and Neeley, 2005; Doumont, 2005; Maxwell, 2007).
Typographic features of slide designs
Font
• For maximum legibility, use the sans serif fonts (e.g., Arial, Tahoma, Calibri, etc.) as their uniform line thickness makes them easy to read (Alley and Neeley, 2005; Donahue, 2009; Duarte, 2008; Holzl, 1997; Ulrich and Willett, 1998).
• Avoid using decorative fonts (e.g., Old English Text) or script fonts (e.g., Lucida Handwriting) that look nice but are difficult to read on screen (Donahue, 2009).
• Use no more than two different fonts per presentation – one for headings and one for text (Donahue, 2009; Holzl, 1997).
Font size
• The text must be properly sized (Duarte, 2008; Rickman and Grudzinzki, 2000). Use 28 to 50 point font for headings and no smaller than 24–32 point font for the text (Alley and Neeley, 2005; Donahue, 2009; Holzl, 1997; Ulrich and Willett, 1998).
Case
• Text should be in a combination of upper and lower-case letters or all lower-case letters (Duarte, 2008; Holzl, 1997).
• Avoid setting text in all capital letters, except for titles, as all upper-case letters can be difficult to read (Alley and Neeley, 2005; Donahue, 2009).
• For emphasis, use bold or italic typeface but avoid underlining (Donahue, 2009).

In light of the expert-recommended PowerPoint features listed above, the present study addresses the following research questions:

1 In the absence of student-reported previous training, do PowerPoint presentations designed by international graduate students observe experts' advice regarding the organisation of presentations?

2 In the absence of previous training, do student-designed PowerPoint presentations observe experts' advice about the style of the presentation designs (i.e., the use of colour, motion and graphics; the style of the headlines and the text, etc.)?

3 In the absence of previous training, do student-designed PowerPoint presentations follow experts' advice concerning the typographic features of presentations (e.g., the choice of fonts and font size)?

3 Methodology

3.1 Participants

Participants in this study were 29 first-year international students studying in a Master of Arts Program in Applied Linguistics at a US university. They were all in their first term of study in the programme. The presenters were of both genders (19 females and ten males), between the ages of 22 and 59 (M = 27.7). They were native speakers of 12 languages: Chinese (n = 7), Japanese (n = 6), Arabic (n =3), Indonesian (n = 2), Spanish (n = 2), Ukrainian (n = 2), Gurunsi (n = 1), Kikuyu (n = 2), Thai (n = 1), Vietnamese (n = 1), Russian (n = 1) and Uzbek (n = 1). The participants had spent, on average, less than a year in the USA (M = 0.9, ranging from .2 to 3.0 years) and only two of the participants had previously received a BA degree from another US university. The participants self-reported to have studied English for a period of time ranging from three to 20 years (M = 11.9 years) and, as part of the programme admission requirements, they had to submit TOEFL proficiency scores. Their paper-based TOEFL scores were ranging from 550 to 660 (M = 593), their computer-based TOEFL scores – between 250 and 253 (M = 251) and their internet-based TOEFL scores were in the range of 90 and 107 (M = 97). Based on the TOEFL score comparison table, the computer-based and internet-based scores correspond to a paper-based score ranging from 577 to 627. The high language proficiency scores indicated that, prior to being admitted to the Applied Linguistics Program, the participants had already achieved an advanced level of proficiency in the English language that allowed them to successfully pursue a graduate degree at a US university.

The participants had differing experience with presenting. They all reported to have previously designed PowerPoint presentations at least once but only two participants reported to have done some oral communication and public speaking coursework with a brief emphasis on PowerPoint slide design. Overall, their self-reported presentation experience, including the design of visuals, varied from 1 to 5 on a six-point scale (M = 2.4), which confirmed the diversity of presentation design experience the participants previously had. Their current programme of study required from them to give between two and six presentations of different length per term (M = 3), as part of their course requirements, by using PowerPoint. The students reported that their instructors briefly discussed their expectations of the presentations, focusing on the content rather than on any aspect of the slide design.

3.2 Data

The data, which consisted of 29 PowerPoints (total number of tokens in the corpus 21,300 words), were collected during routinely scheduled class presentations. At the time of the data collection, the participants were taking courses in Linguistics and Applied

Linguistics and were encouraged to use visuals for their final project presentations by their respective instructors. They all chose to use Microsoft PowerPoint software for designing the slides of their presentations. The presentations were on linguistic topics of the participants' choice. They were theoretical in nature, based predominantly on library research and were delivered to satisfy a final project presentation course requirement. The students were given about a month to conduct research and complete their projects by using a variety of sources, including printed documents (books, journals, etc.), available experts (scientist or other instructors) and electronic information resources. The presentations were given before small audiences of peers (M = 23 students), in classroom settings, over the final weeks of the respective terms. They were limited to 15–20 min. presentation time (M = 18.9 min.) set by the instructors and were all given the highest grade. The examination of the instructors' checklists of criteria for evaluation of the presentations showed no specific criteria for evaluation of the PowerPoints, except for a couple of entries concerning the availability of some sort of visual aid (PowerPoints or overhead transparencies) and a handout.

3.3 Results

Based on the literature review of what the experts consider to be the 'best' PowerPoint design practices, three main sets of features were chosen for investigation in this study: organisation of presentations, style of slide designs (i.e., the use of colour, motion, graphics, style of headlines and text) and typography of slide designs (i.e., the choice of font and font size). The results of the analysis regarding each of the three features are discussed below.

3.3.1 Organisation features of presentation designs

The average length of the PowerPoint presentations was 20 slides (M = 734 words) per presentation, which means that the students had spent more than a minute per slide discussing its content. Table 2 shows the overall presentation structure and the sequence of slides the students used to organise the flow of their presentations.

Table 2 Organisation of students' PowerPoint presentations

Sections	*Percentage of students using the sections*
Presentation title slide	100%
Preview slide	21%
Body of the presentation	100%
Conclusion/summary slide(s)	41%
Thank you slide	34%
References slide(s)	52%
Picture slide	10%

It is evident that the participants consistently had a presentation title slide only, while they largely considered the other organisational elements optional.

3.3.2 Style features of slide designs

To evaluate participants' style of slide designs, binominal tests were conducted to compare students' use of PowerPoint design templates and colour, animation, graphics and style of headlines and text. The hypothesised value for all tests was set at .50.

3.3.2.1 Colour

The *z*-approximation tests concerning students' use of templates vs. their designing slides on their own showed that a significantly greater number of students chose to use ready-made presentation designs (.76 observed proportion, $p < .01$) than design their own slides from scratch (.24 observed proportion, $p < .01$). Some students chose white background templates (.41 observed proportion), while others chose other solid colour backgrounds (.59 observed proportion). However, the difference between them was not significant ($p = .349$). More importantly, a significantly greater number of students (.81 observed proportion, $p < .001$) consistently maintained their colour palette choices and a contrast between background colour and text colour compared to the ones who were less consistent (.19 observed proportion, $p < .001$).

3.3.2.2 Motion

The software provides automatic or custom animation options for emphasis, entrance or disappearance of text and figures. As far as animation goes, some students (.49 observed proportion) chose to custom animate parts of their PowerPoint presentations, while others (.51 observed proportion) chose not to, but the difference between them was not significant ($p > .05$). It is interesting to note, though, that more students (.77 observed proportion) applied custom animation to their slides rather inconsistently, compared to the ones (.23 observed proportion) who managed to maintain consistent animation and transitions throughout their presentations ($p < .001$).

3.3.2.3 Graphics

The participants in this study also made use of a variety of visual representations, including pictures, clipart, tables and graphs. However, while the difference between the students who used pictures (.41 observed proportion) and those who did not (.59 observed proportion) was not meaningful ($p = .349$), a relatively small number of presenters used tables (.12 observed proportion), clipart (.05 observed proportion) and graphs (.07 observed proportion) and the differences between them and the ones that did not use any of those visuals in their presentations were highly significant ($p < .001$).

3.3.2.4 Style of headlines

The examination of the headlines showed that, whenever the students included a headline on their slides, they used three language structures – phrases, statements and questions. A Wilcoxon test was conducted to evaluate whether the students used more frequently headlines formulated as phrases, statements or questions. The results indicated significant differences between the use of statements and phrases ($Z = –5.98$, $p < .001$), questions and phrases ($Z = –5.98$, $p < .001$) and questions and statements ($Z = –2.57$, $p < .01$). This showed that the students used phrases for headlines more frequently than statements or questions and questions more frequently than statements.

3.3.2.5 Text

The analysis of the text portion of the slides revealed that a significantly greater number of students (.77 observed proportion) did not structure their text hierarchically and only a small number (.23 observed proportion) used two or more levels of text hierarchy ($p < .001$). All students designed a combination of slides that contained either bulleted lists of phrases or bulleted lists of sentences (statements and questions). In addition, the majority of the students used slides that contained a mixture of both. To find out whether the students used more frequently bulleted lists of phrases and sentences only or a mixture of both in their presentation, a Wilcoxon test was performed on the data to compare the frequency of the three types of text. It revealed that the students used sentences significantly more frequently than phrases ($Z = –2.04$, $p < .05$) or mixed (phrases and sentences) text slides ($Z = –3.15$, $p < .01$); however, the difference between students' use of phrases and mixed text slides was not significant ($p = .974$).

3.3.3 Typographic features of slide designs

Binominal tests, which hypothesised value was set at .50, were conducted to evaluate students' choices of typographic features in their PowerPoint designs, including font and font size.

3.3.3.1 Fonts

The *z*-approximation test to evaluate whether or not the participants used mostly sans serif fonts revealed that a significantly greater number of students chose to use sans serif (.77 observed proportion, $p < .001$) rather than serif fonts (.23 observed proportion, $p < .001$). In addition, a much smaller number of participants (.12 observed proportion, $p < .001$) used two fonts (one for headings and one for the text) than the ones who used only one (.88 observed proportion, $p < .001$).

3.3.3.2 Font size

The average font size of the headlines was 40 point type (ranging from 24 to 50 point type) and the average font size of the text was 27 point type (ranging from 16 to 36 point type). The *z*-approximation tests performed on the consistency of students' keeping the same font size of headlines and text across their presentations showed that a significantly smaller number of students maintained consistency of the font size they used for their headlines (.23 observed proportion, $p < .001$) and even a smaller number kept the size of their text uniform throughout their presentation slides (.04 observed proportion, $p < .001$).

4 Discussion

The process of presentation development can be rather laborious for both seasoned and novice presenters as it requires several sets of skills, including academic skills (e.g., research, analytical, critical thinking and organisational skills to arrange the logical flow of the presentation, etc.), presentation design skills and the use of technology, in

addition to mastery of a set of presentation skills. It appears, then, that requiring students to give oral presentations in content areas not only enhances their learning of that content but also achieves some added goals that bridge the demands of students' education with their career success (Nicosia, 1997). That also explains why many instructors, particularly in graduate student programmes, assign presentations as a graded component of their courses and encourage their students to use Microsoft PowerPoint to design the visuals of their presentations. However, experience shows that few content-area instructors discuss expert recommended PowerPoint features with their graduate students or consider it important to discuss with them the physical features of PowerPoint slides that experts recommend as 'efficient'. More often than not, they seem to take for granted that even novice presenters 'know' how to design PowerPoint slides efficiently. One possible explanation behind these practices can be that content-area instructors themselves may only have tacit knowledge of what makes a PowerPoint presentation design effective which, however, they may not deem sufficient for teaching the skill itself. Or it maybe that the instructors themselves do not know how to articulate what makes an effective PowerPoint presentation and, for this reason, they do not discuss the 'how-to' design aspects with their students. Whatever the reason might be, the end result of such practices is that students are largely left on their own to decide how to design the visuals of their presentations and, at the same time, we know very little about the extent to which their 'intuitions' are in concert with experts' advice. While it is arguable that instructors who encourage their students to use PowerPoint as a visual aid for their presentations should be able to articulate and address the issues of what makes a PowerPoint presentation design effective, it is not arguable that these questions should be effectively addressed in coursework and programmes that are specifically targeting the development and refinement of such skills.

In this regard, the analysis presented in this study was an attempt to get a glimpse of the reality of international graduate student PowerPoint presentations and find out, in the absence of consistent training in using PowerPoint those students self-report, to what extent we can rely on their intuitions about what constitutes 'effective' slide design practices. The analysis was based on the PowerPoint slides of the participants' final-project presentations, which content-wise were graded with the highest grade by the respective instructors, thus showing a high level of content-area expertise and an advanced level of language proficiency to communicate this expertise. The data analysis was carried out mostly quantitatively and the conclusions about the participants' intuitions and preferences were drawn based on the final product of their PowerPoint slide designs. The assumption was that since all presentations included in the data were graded as high quality presentations and the analysis was able to identify quantitatively specific patterns of PowerPoint uses of slide design, one can fairly confidently draw conclusions about students' preferences and intuitions as evidenced by the data. Furthermore, since most of the decisions regarding the presentation content affect the design of the slides, the analysis was also able to uncover the participants' strengths as PowerPoint presentation designers as well as some of their weaknesses, both of which deserve our attention.

In the following paragraphs, I am going to discuss the findings of the study in relation to experts' advice, which will shed some light on what international graduate students see as 'efficient' practices of PowerPoint presentation designs and what features

they overlook. Table 3 presents a comparative summary of expert-recommended and student-observed PowerPoint design practices, as supported by the results of the analysis. The rest of the discussion section will be devoted to elaborating on the findings of the study and each of the three sets of features chosen for investigation – i.e., organisation, style and typographic features of slide designs – will be discussed in turn.

Table 3 Comparative summary of expert recommended and student observed PowerPoint presentation design practices

Experts' advice	*Student PowerPoint practices*
Organisation features of presentation designs	
Inclusion of a preview and conclusion.	Not consistently observed
Style features of slide designs	
General recommendations	
• Avoid 'bells and whistles' and do not overuse the special effects.	✓
• The use of any special effects should be purposeful.	✓
• Be consistent and limit the number of fonts, colours, backgrounds and effects for clarity and readability.	Not consistently observed
Colour	
• The colours used for text and the background should be in contrast.	✓
• Use colours sparingly – one colour for titles and another for text.	✓
• Use solid colour backgrounds behind text.	✓
• Use solid colours for filling in charts and tables.	✓
Motion	
• Use motion to emphasise key points, for slide transition and for 'building' slides.	✓
• Otherwise, use the 'appear' option.	✓
• Use natural transitions.	Not consistently observed
• Avoid using text that moves onto the screen in distracting ways (i.e., flashy animation).	Not consistently observed
Graphics	
• Graphics should be relevant to and enhance the meaning of the text.	✓
• Graphics should not be used for decorative purposes.	✓
• Limit the number of graphics or images on each slide.	✓
• Keep graphs, charts and diagrams simple.	✓
Headlines	
• For every slide, but the title slide, use a sentence headline.	Not consistently observed

Table 3 Comparative summary of expert recommended and student observed PowerPoint presentation design practices (continued)

Experts' advice	*Student PowerPoint practices*
Style features of slide designs	
Text	
• Effective slides convey messages clearly and accurately, yet they are visually concise.	✓
• Use examples after concepts to facilitate and enhance recall.	✓
• Slides should almost always include some text, stated as short complete sentences.	Not consistently observed
• Beyond the text statement, the message should be developed visually.	✓
• A slide should be able to stand on its own.	Not consistently observed
• Avoid bulleted lists that do not show the connections among the listed items.	Not consistently observed
Typographic features of slide designs	
Font	
• The text must be properly sized.	✓
• For maximum legibility, use the sans serif fonts.	✓
• Avoid using decorative fonts.	✓
• Use no more than two different fonts per presentation – one for text and one for headings.	✓
Case	
• Text should be in a combination of upper and lower-case letters or all lower-case letters.	Not consistently observed
• Avoid setting text in all capital letters.	✓
• Use bold or italic typeface for emphasis but avoid underlining.	Not consistently observed

4.1 Organisation features of presentation designs

The organisation of the PowerPoint presentation is one of the features that brings it the closest to academic writing and the expectation is that the academic presentation should be organised into sections that largely reflect the organisation of a written paper. In this regard, Doumont (2002, 2005) proposed the use of 'effective redundancy' as a law of professional communication, where effective redundancy recognises the necessity of 'saying things more than once' to increase the clarity of the message and facilitate the information processing of the audience. In oral presentations, effective redundancy can be realised by including a preview of the upcoming structure, a review of the main points and concluding or summarising slides (see Table 1).

Indeed, the participants in this study included these organisational elements in their presentations but to a differing extent. They all had a title slide with the presentation title,

79% had the presenter's name on the slide, 28% included the course number, 10% listed the course title and the instructor's name on the slide and 3% included even the term in which the presentation was given. It is obvious that some of this information is redundant (e.g., the course title, the instructor's name and the term), so graduate students may need to be advised that having the title of the presentation, their name and possibly the course number (if they are taking multiple courses with the same instructor in one term) provide sufficient information that is relevant for inclusion in the title slide. The rest of the information (i.e., instructor's name, course title and term) only clutters the slide.

Looking at the other organisational elements (see Table 2), it becomes immediately noticeable that the participants included rather inconsistently the rest of the recommended elements (i.e., preview and conclusion). Even though they presented on topics that were new to the audience, a relatively small percentage of the students (21%) considered including a preview of their presentations, only 41% offered a summary of their main points or some concluding remarks and about half of the students (52%) listed their reference sources. Thus, the results strongly suggest that novice presenters need to be advised what organisational elements should find their way into their PowerPoint slides, what elements are optional and which ones are redundant. I recommend that graduate students giving academic presentations on research topics should consistently include the following organisational components: an outline, conclusion or summary and a list of references. A thank you slide should be optional and ending with irrelevant images (in this case, pictures that had nothing to do with the presentation topics) should be avoided.

4.2 Style features of slide designs

PowerPoint makes it easy to pack graphics, colour, motion and sound into a presentation. This flexibility, however, may turn out to be the source of redundant special effects added to a presentation if not used purposefully and consistently. There seems to be a consensus among the experts that presentations which use the same well-chosen design elements from slide to slide look professional and coherent and do not distract from the message.

The analysis of the style features of the PowerPoint presentations used in this study showed the greatest variation. Overall, the presenters used wisely the special effects (colours and motion) – usually for the purpose of adding some emphasis; however, the consistency of the use of certain style features was not maintained throughout the presentations. It did not come as a surprise that a significantly greater number of participants (86%) chose to use PowerPoint templates with different solid background colours and only 14% chose to use the black-and-white default template. This also suggests that, overall, the participants tried to avoid the fuss and bother of creating designs from scratch and largely relied on the pre-fabricated PowerPoint templates for colour, layout and font choices. This probably explains why the participants most consistently observed their colour palette, maintained contrast between the colour of the text and the background and used colours sparingly. Thus, contrary to some PowerPoint critics' recommendations to create slides from scratch rather than using PowerPoint default settings, the participants in this study chose to use prefabricated templates without changing much, if anything, of the default settings which, actually, added consistency to their slide designs. In this sense, as a time-saving strategy, it will be wiser to recommend

to novice presenters to use PowerPoint templates with pre-coordinated colours, fonts and backgrounds by choosing templates with solid background colour rather than pattern and contrasting colours between text and background, instead of advising them to create their template slides anew. Such a strategy will improve the consistency of some of the style elements, though students have to be advised that these features need to be monitored if some of the default settings are changed (e.g., font, font size, etc.).

As far as animation goes, the experts seem to agree that presenters who use animation risk distracting their audience from the content of the message and, therefore, animation should be used minimally. In regard to transitions and builds, Ball (2006), for instance, advices presenters to use basic transitions such as a dissolve, and Paradi (2003), among others, recommends using the 'appear' effect rather than any of the eye-catching movement options. Above and beyond any concerns about whether or not animation actually adds any value to a presentation, custom animation can be quite time consuming, especially if one is concerned with the purposefulness and consistency of the animation. This is probably the reason why whenever the participants in this study used motion effects, they custom animated only parts of their presentations – usually for emphasis; otherwise, they predominantly used non-animated slides (i.e., the 'appear' option). Nonetheless, whenever custom animation was used, it was most of the times flashy (e.g., faded swivel, spinner, pinwheel, magnify, flip) and inconsistent, which gave the impression that it was used for the sake of adding motion to the text rather than for a purpose. The transitions were also not what the experts call 'natural', which suggests that students need to be advised how to use motion sparingly, purposefully and consistently rather than as a 'special effect'.

By and large, the use of graphics largely depends on the content of the presented material. The participants in this study were students in the humanities and they presented on theoretical topics that they developed through library research, which explains the fairly scarce use of tables (10% of the students) and graphs (14% of the students). Those who used graphics, though, observed experts' advice to limit their use of one image per slide and to keep them simple and uniform. Most frequently, the tables contained examples and the graphs illustrated processes. Many of the students (69%) used pictures in their presentations (maps, photos, cartoons, etc.) and, for the most part, they were used purposefully. Only the clipart (10% of the students) seemed to be used for decorative purposes, which suggests that students may need to be reminded that graphics should be relevant to the meaning of the text and should not be used for decorative purposes.

Some of the harshest criticisms levelled at PowerPoint users are linked either to their bulleted lists of information presentation, which deprive a presentation of character, or their excessive use of text, which promotes a presentation to be read from the slides rather than presented. The experts seem to agree, though, that the message should be stated clearly and accurately, yet concisely. However, what 'concisely' means in measurable terms is a point of debate and experts' opinions are largely based on individual preferences rather than empirically tested practices. For instance, Bowman (1998) recommends a maximum of five bullet points with no more than five words in each; Brydon and Scott (2003) suggest a maximum of six lines, with no more than six words in each; Hamilton (2003) also proposes no more than six lines, but with a maximum of 40 characters per line. Finally, Pratt (2003, p.23) offers the 'triple seven rule' of no more than seven bullet points with up to seven words each. I believe,

however, that what constitutes 'concise' cannot be easily quantified in number of words, lines or characters as it depends on how the words work together to create meaning. The examination of the text portion of the students' slides revealed that the presenters did not follow experts' advice to the letter. Their slide headings were mostly formed as phrases (72%) and much less frequently as statements (3%) or questions (7%). About 18% of the slides did not have a heading at all which suggests that students should be advised to be more consistent with including headings on their slides. Overall, the slides were uncluttered and the main points were stated more frequently as short sentences than phrases. The students did, however, organise their text in a bulleted fashion (on average, three to four bullets per slide), predominantly non-hierarchically and very rarely revealed the bullet points one at a time during their presentation delivery. Whenever the presenters used bulleted lists of phrases, they were usually limited to subheadings, followed by examples. The presence of mixed (phrases and sentences) bullet text slides, however, was more disturbing as 86% of the students had created such slides, which shows that the presenters did not consider consistency of text construction as a valuable feature of their presentations. I should note here, though, that this line of text analysis is rather superficial as it is limited to some of the physical characteristics of text construction. A more in-depth analysis of the relationship between information content, spoken and written text and how they complement each other is needed to throw valuable light on students' perceptions of this relationship and where our training efforts should be focused if necessary.

4.3 Typographic features of slide designs

The typography of PowerPoint presentations is a feature that primarily improves the readability and adds to the professional feel of a presentation. By and large, the participants in this study closely observed experts' recommendations. They used sufficiently large font sizes both for the headings (40 point type, on average) and the text (27 point type, on average). A significantly greater number of participants used sans serif fonts and avoided the decorative ones and only a few students used two fonts in their presentations. Whenever bold or italic typeface was applied, it was used for emphasis or to mark the examples (though, not always in a consistent fashion throughout a single presentation).

Overall, however, it could be said that the students did not seem to pay much attention to the consistency of some of the typographic features in their PowerPoint designs. For instance, in most presentations, the font of the headlines was kept the same, but the rest of the typographic features were used in random combinations – i.e., within a single presentation, some headings were in bold capital letters, others – in small case letters; some were underlined, others were not, etc. Second, the font size of the headings and the text was not kept uniform throughout all presentation slides. Third, more than half of the students (53%) used a title case or sentence case formatting for their headings without regard to whether a heading was formulated as a sentence or phrase. These are some of the typographic features of PowerPoint presentations that students do not seem to be paying much attention to, which suggests that it will be worthwhile glossing over those features of PowerPoint designs in class to pinpoint the specific effect of consistency they bring to the overall impression of a presentation.

5 Conclusion

To conclude, expert advice about 'best practices' for PowerPoint use abounds; however, to my knowledge, the reality of students' PowerPoint designs has not been studied in comparison to experts' PowerPoint 'tips' either in local or international educational context. This study was an attempt to unveil what novice international graduate student presenters, who have not previously had consistent PowerPoint training, consider to be 'effective' presentation design practices and the extent to which these practices were in agreement with experts' advice. The main reason for choosing to analyse international students' PowerPoint presentations was linked to the common observation that international graduate students come from extremely diverse educational traditions that may or may not have put any emphasis on developing their presentation skills, including the use of PowerPoint (or any other presentation design software, for that matter). In that sense, compared to local graduate students, especially at North American universities, who generally receive some consistent instruction on developing their presentation skills (including the use of PowerPoint) in a range of courses during their undergraduate studies, international graduate students usually face the challenge of 'groping' their way around in finding out how to use PowerPoint most effectively as well as what PowerPoint design features are considered desirable and what are not. Thus, the driving force behind the study was to find out, above and beyond the content of the presentations, to what extent we can rely on novice presenters' intuitions as evidenced in their PowerPoint design products about what constitutes 'good' PowerPoint practices. The study was also designed to uncover what areas we may need to focus our efforts on in EAP programmes, oral communication and technology use coursework, or in-class discussions regarding the effectiveness of certain physical features of student-designed PowerPoint visuals that will enhance the overall effect of their presentation on professional audiences.

The general conclusion is that, if we consider the three characteristics – relevance, consistency and simplicity – to be the key features of effective PowerPoint presentations, we can rely on international graduate students' intuitions concerning 'relevance' and 'simplicity', but we should draw their attention to 'consistency', i.e., the systematic application of the organisation, style and typographic features to their PowerPoint slide designs. On a final note, while the focus of analysis of the present study were international students' PowerPoint presentation designs, it would be valuable to know how local students' PowerPoint design features compare to experts' advice and how their strengths and weakness compare to the ones found for international students. Future research in this direction will throw valuable light on whether beginning graduate students (both local and international) are actually well-equipped to develop professionally their presentation skills, including their use of presentation design software, without any further instruction and guidance or whether we, as content-area instructors, may need to devote time and be explicit about what constitutes 'effective' PowerPoint presentation practices. The general assumption that graduate students simply 'know' how to design the visuals for their presentations may turn out to be largely ungrounded.

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