TECHNOLOGY ACROSS CURRICULUM: THE UTILIZATION AND ABUSE OF POWERPOINT AS TEACHING AND LEARNING TOOL

Reginald Amadi, Ph.D
Department of Curriculum and Instructional Technology,
Ignatius Ajuru University of Education, Rumuolumeni, Port Harcourt,
River State.

And

Abraham Oriji, Ph.D
Department of Curriculum Studies and Educational Technology,
University of Port Harcourt, Port Harcourt,
River State.

Abstract

The use of newer technologies in the education industry has gained much attention in recent times. MS PowerPoint software has been forcefully marketed to business and academic arenas with the guarantee that it will enable users to quickly make better, neat and professional presentations. Despite the acclaimed positive uses ascribed to it, many scholars opined that the software itself may actually undermine and distort student's learning. This paper therefore examines major merits of PowerPoint as both instructional and presentation programme. The paper also discussed some salient issues confronting the use and misuse of the program. The authors suggested some key pedagogical decisions that could be considered for its effective utilization in and out of the classroom. The paper suggested that PowerPoint users should be properly trained in order to acquire the skills needed for good presentation/instruction. It summarized some of the key doctrines of presentation that are frequently ignored and suggests some approaches that need to be incorporated into good practice. The paper provided pertinent questions to be answered for effective PowerPoint preparation. The authors are of the opinion that the merits of PowerPoint as a teaching/learning programme outweigh its demerits if properly applied to teaching and learning process.

Keywords: Technology, Curriculum, Instruction, Teaching tool, PowerPoint.

In the time past, most computer users are very much familiar with word processing packages and spreadsheets, but many computer users are not familiar and never used a presentation programme. Presently however, the use of Microsoft PowerPoint as a presentation/instructional programme has started gaining much attention. Its use is increasing geometrically, not only as a presentation programme but as an online instructional package, which can be easily integrated with other application programs. Alster (2002) and (Finkelstein, 2003). Mason & Hylnka (2008) are of the opinion that the use of PowerPoint aid teaching and learning. Clark and Mayer (2008) asserted that PowerPoint presentations are excellent tool for use in the classroom. This programme has been excitedly embraced at all levels of our educational systems, ranging from primary schools to the universities, claiming that it will enhance instruction and motivate students to learn (Harrison, 2008).

Microsoft PowerPoint program has emerged as one of the most dynamic presentation tools in today's information age. PowerPoint presentation comes in many forms, styles and custom layouts and is used by working professionals, academicians, students, medical practitioners, politicians and others to showcase materials, information and data. Slide shows and complex presentations comprising text, images, 3-D graphics, audio clips, sound effects and flashy animations are used creatively to enliven discussions, add value to lectures, make compelling speeches and enrich studies and reports.

Many teachers believe that PowerPoint presentation is a productive learning activity for students, yet detractors believe that its rigid format stifles not only students' creativity, but also their ability to understand and convey information (Tufte, 2003 and Keller, 2003). Critics, nevertheless, argue that the software's rigid format usually weakens verbal and spatial reasoning, and almost always corrupts statistical analysis (Tufte, 2003). Szabo and Hastings (2000) and Lowry (2003) also observed that its use is far from controversial in this educational context and opinions as its use range from highly supportive to significantly negative. In the same critical manner Alster (2002) opined that PowerPoint is not inherently capable of engaging students, despite enthusiastic claims by its promoters. Such unfounded faith is best represented by those presenters who project PowerPoint slides on a screen and then simply read the contents of each slide, one after another, until the presentation is finished.

PowerPoint is a presentation programme, which means that you can create presentations that you develop and show on a computer screen. PowerPoint Presentations are like slides shows, but no physical slides are necessary. In addition, design professionals have now made it easier for any one to create an attractive, effective presentation in a few minutes. PowerPoint is adjudged today as one of the most popular and easy to use presentation programme available. Furthermore, PowerPoint has enough features, such as clip arts, sound flies, and animation effects that usually interest and entice or lure learners to its instructional programmes. It has

also been updated to provide greater ease of use and a number of new features have been added to aid learning.

Microsoft PowerPoint is all about communication. It gives us the tools you need to create a professional quality presentation. No longer do you (educators and students) spend huge sums of money on graphic artists, or a slide bureau to create presentations for your programmes. It also offers an excellent and powerful tool to facilitate improved delivery of many courses and modules. However, its use is far from controversial in educational context and opinions as its use range from highly supportive to significantly negative (Szabo & Hastings, 2000; and Lowry, 2003).

Importance of MS PowerPoint in Teaching/Learning

PowerPoint is a programme that helps you plan, organize and design professional presentations. If you want to lay emphasis or make your points more powerful, then, PowerPoint is the answer. PowerPoint is a graphic feature-rich package/program widely used for teaching/learning situation. Gupta (2008) has summarized the importance of PowerPoint in both education and industry thus:-

- Designing a presentation like product profile, research papers, dissertations, etc.
- PowerPoint makes your work easy, fast and more professional
- The program allows you create slides, handouts, outlines and speaker's notes
- It has a lot of design templates for presentations
- You can communicate to your audience through electronic slides
- It offers numerous tools and techniques for designing and running dynamic slides that change via time set
- It has tools that help you to easily design slides and add or insert texts, graphics, bullets and animate slides and other objects or medium of instruction.
- PowerPoint is an excellent aid to providing a transparently structured presentation, especially at this time of online learning where modules are best presented via the PowerPoint slides.
- It can be run on the network/Internet, and its use on online instruction can enhance the effectiveness of instruction in many ways in every subject area.
- You can print your slide in different coloures, or on any other formats, such as - handouts, notebooks and outline view.
- **11.** PowerPoint presentations capture the essence and summarize key points of highly detailed reports, surveys and studies on any subject matter. Slides with statistical highlights and important facts are also used to present critical information (*http://www.ehow.com/facts_4886024_what-benefits-PowerPoint .html*).
- PowerPoint presentation is usually orderly, systematic and sequentially presented to the learners/audience. Subjects could be broken into bits and this feature-rich format is effectively utilized, especially during online packaging of instruction.

(*http://www.goo.com/website*). This, therefore, conforms to the segmentation principles.

• PowerPoint is used for development of self-study materials. Presentations can also be set up to run automatically if required, as demonstrations/instructions within a laboratory.

• Files, especially on compact disks (CDs), USB flash and diskettes, with their large capacities allow presentations to be given wherever the technology is available or distributed where appropriate (Mottley, 2003). Teachers can take slides from one lecture, update it and include such to another lecture and/or share them with colleagues or students.

• Introduction of newer features, custom templates and the ability to use them in many platforms makes PowerPoint a flexible and highly customizable tool. User ingenuity can be meshed with these flexibilities and customization characteristics to present information and material to suit specific learners' needs and general audience.

• Sales professionals regularly use compelling PowerPoint presentations comprising of data and informative content to inform, educate and stimulate different user audiences about products and services available in their stock.

• It has been proven that texts on PowerPoint slide are easily seen then the chalkboard. The visual imagery made possible by juggling various PowerPoint combinations, design templates and other tools is used by speakers to add value to speeches and presentations and engage audiences via projector screens during conferences, seminars and symposia (*http://www.ehow.com/facts_4886024_what-benefits-PowerPoint .html*)**.**

• Currently, PowerPoint has become useful aid to students' coursework. They are required to use PowerPoint to give presentations as a part of the course requirements. In this development, seminars, thesis and dissertations are done through the use of PowerPoint software.

• PowerPoint can actually improve learners' note-taking abilities. When lectures are presented, students develop note-taking skills by writing down the most salient points on each of the slides as presented. Since the bulleted points are big and visible enough, they are able to take down notes faster than the conventional chalkboard/blackboard.

• The greatest advantage of using PowerPoint for classroom lessons is that you can modify your information and use them over and over again, each time you teach those lessons. Teachers can easily update their lectures within limited time and energy.

• PowerPoint provides a platform for incorporating a variety of different kinds of multimedia file type images, video, audio, and animations.

• Supporters of PowerPoint say that the ease of use of presentation software can save a lot of time for people who otherwise would have used other types of usual aid-hand-drawn or mechanically typeset slides, blackboards or whiteboards, or

overhead projections. Ease of use also encourages those who otherwise would not have used visual aids, or would not have given a presentation at all to make presentations today. As PowerPoint's style, animation, and multimedia abilities have become little more sophisticated, and as the application has generally made it easier to produce presentations, most educators and/or academicians have found it very useful for all their instructional settings (http://en.wikipedia.org/wiki/ Microsoft_ PowerPoint).

- PowerPoint could be used to develop field trip slide shows to review and apply knowledge learnt on a field trip. Students can work together to make a slide show that presents what they saw, as well as what they learnt.

Demerits of PowerPoint as Teaching and Learning Tool
PowerPoint has been acclaimed to be more exciting than a simple word document or hand-written presentation; but of these notable attributes however, (Alster, 2002) and Jones (2003) and among others suggested several risk factors associated with using the technology that makes some reluctant to commit to its use as both presentation and instructional tools. Amongst these are:-

i. **Multi-system requirements**: A PowerPoint requires a set of systems. A presentation for a medium or large size audience would need an uninterrupted source of electricity or a generator, a computer system that is free from technical problems and software breakdowns, a projector, speaker system, and other system requirements for carrying a successful presentation.

ii. **Technical skills:** PowerPoint presentation requires a lot of skills, time and patience. Thus, teachers are often unwilling to invest their time, skills and the patience required to convert materials to an appropriate PowerPoint presentation format. Those that put little time or effort do so in an unacceptable manner. These presenters simply use PowerPoint as an alternative way to provide text-based notes. This problem is more prominent among the older and less technology-orientated teachers. Lack of appropriate training in both the programme and the technology has been observed as one of significant problems in many institutes (organizations).

iii. Some computers/systems may not be compatible with the multimedia projectors. This causes a lot of problems during presentation. This type of disappointment makes some teachers and students alike to totally withdraw from the use of PowerPoint software for presentations.

iv. The projector bulb may fail, even if it is very rare; but this occasionally happens.

v. **Corrupt or virus infected file(s):** File(s) may be corrupt due to physical and/or magnetic damage. Some removable disk, such as USB flash and diskettes are sometimes infected with virus, and a computer that is protected with antivirus could delete the filename(s) at the point of getting ready for presentation. Some computers/systems that are virus infected could also make the system to malfunction at the point of presentation.

vi. **Presenters dominance:** PowerPoint seeks to set up a speaker's dominance over the audience. It has been observed that the misapplication of PowerPoint causes or encourages students and teachers passivity. The presenter does the talking while the audience listens endlessly. Due to lack of, or minimal interaction between the two parties, the presenter dominates the entire presentation process.

vii. **Boring texts:** Teachers/Trainers oftentimes overload slides with texts and graphics, thereby forcing students to concentrate or to read the information on the slide instead of listening to the main lecture. So, unnecessary texts on a slide will definitely distract students from the chosen concept. It is therefore advised to keep texts within limit and avoid irrelevant information.

viii. **Discourages class attendance:** As an instructional strategy, PowerPoint presentation, when given to students in form of CD before the lecture could discourage them from attending classes. This is because they already have a copy of the slideshow, hence, sees no need for attending class. This may also be due to the fact that some presenters merely read the texts on the slideshow instead of lecturing and explaining what is on the slide.

ix. **Incompatible media:** Most of the software are not compatible with the hardware. It has been noted that presenters on arrival to the presentation venue notice that their files are incompatible with the system at the presentation center. Best solution however, is to be aware of the systems you plan to use, or you carry your own laptop for safety reasons.

x. **Bad texture backgrounds:** PowerPoint presentations are oftentimes messed up due to wrong choice of texture backgrounds. Good examples are the imposition of Blue font upon Purple mesh background, White font upon Paper bag background, Green font upon Blue background, Yellow font upon papyrus background, etc. When

these font colours are wrongly applied, the texts become invisible to the audience, particularly for those that has bad sights.

xi.   Design choice: Another major point is the wrong choice of designs against the fonts chosen. This makes it very difficult for those taking notes during the presentation.

xii.   Power or electricity: PowerPoint is best used with some hardware (multimedia, speakers and computers), and cannot operate or be presented without electricity. In view of the erratic power supply, especially in Nigeria makes its use very difficult and unreliable.

xiii.   Information transmission mode: One of the major problems is that its current use is frequently limited to an information transmission mode, often with excessive content, a usage that obscures the wider potential for diverse professional and pedagogically-sound Presentations.

xiv.   Technophobia: Many teachers find it difficult to adopt new technologies. There is an adage that says, "You can't teach old dog new tricks." Technophobia among PowerPoint presenters is one of the problems confronting the use of PowerPoint, particularly in the academic circle where most of the older senior lecturers and professors are barely computer literate.

xv.   Overuse of animations and graphics: With reference to http:// www.apsense.com/ article/ advantages- and-disadvantages- of-using- powerpoint.html, a PowerPoint presentation that uses too many animations, graphics, background images and other dynamic visuals could distract the audience from the actual message or information being conveyed to them.

xvi.   Not for all types of presentations: PowerPoint is not suitable for some types of presentation, such as commencement speeches, poetry recitations, and technical reports that require detailed processes or procedures.

Creating Effective PowerPoint presentation: Key Questions to Answer

Microsoft PowerPoint has been noted to be one of the world's most powerful presentation programmes in the 21st century. Its importance can only be experienced than imagined. Garmston (2000) cautioned thus: "PowerPoint must be used flexibly and sparingly to provide audience interaction with its content". Tools in themselves accomplish nothing, unless they are employed for the appropriate tasks and wielded with skill and precision. Nevertheless, it requires a lot of skills, time, care and patience to create a good presentation for your audience. Thus, many questions need

to be answered for effective PowerPoint presentation. Based on the above premise, the under-listed fundamental questions, though not exhaustive, need to be answered for a successful PowerPoint presentation.

i.   Who is your audience?
ii.   What is your subject matter or topic?
iii.   Has your presentation clear title and sub-title?
iv.   Have you added introduction and/or abstract?
v.   Have you chosen the right language?
vi.   Is the presentation logical?
vii.   Have you allocated an "ideal time" for your presentation?
viii.   Have you chosen a good font?
ix.   Is the font sizeable enough for your audience to see at a distance?
x.   Have you chosen a compatible background with the chosen font colour?
xi.   Have you bulleted or numbered your points?
xii.   Is there enough information to enliven the presentation?
xiii.   Have you added eye-catching images?
xiv.   Have you labeled your image(s) or graphic(s)?
xv.   Who will manipulate the computer during presentation?
xvi.   Have you studied/practiced the use of pointer?
xvii.   Have you cross-checked your grammar and spellings?
xviii. Have you added summary or conclusion?
xix.   Have you added references/bibliography?
xx.   Have you predicted and asked yourself some questions from the presentation?
xxi.   Have you thanked the audience for listening or being patience?

Guidelines for Effective PowerPoint Presentation
It is one thing to create a good presentation, and it is another thing to effectively present it to your audience. Many factors come to play when a well designed PowerPoint could not be effectively delivered to the desired audience. The following under-listed procedures should be noted.

i.   Report at the presentation centre before time: The presenter needs to be at the presentation center before the actual presentation time. This enables you to verify the compatibility of the software, your computer and other equipment at the centre. In case the presenter is not using his/her computer for presentation, there is need to check the system at the location in case of disk problems. The presenter also needs to test the diskette or the CD to be used with the computer at the centre.

ii.   Virus: The presenter needs to check before hand if the computer he/she is to use has virus, malfunctioning, or the file to be used has virus. It is better to solve any of these problems before the presentation time.

iii. **Check disk space:** The presenter needs to ascertain if the computer has low memory, or enough disk space for what is to be presented.

iv. **Check computer resolutions:** The presenter should check the resolutions of the computer before the presentation time in order to reconcile all necessary discrepancies. This is necessary because the presenters' computer resolution may not have the same with the one at the presentation location. If this is not checked before hand, the slide may display poor backgrounds, corrupt, or may display some other problems on the monitor that the presenter cannot imagine.

v. **Practice:** It is also advisable to practice the presentation at home/office before the actual presentation to acquaint yourself of the procedures. Not many people knows how to use pointers, hence, it is advisable to practice its use prior to presentation if it is to be used.

vi. **Transitions/screen savers:** The presenter needs to check the file in order to remove unnecessary transition effects, sounds effects, and turn off screen savers if any. These sometimes cause embarrassments to the presenter and the audience respectively.

vii. **Subject expertise:** The presenter needs to be an authority in the subject he/she claims to present to the audience. From the work to be presented, he/she should ask himself/herself several questions before the presentation time. This will help the presenter to adequately answer any question that will arise from the presentation with ease.

viii. **Timeframe:** Plan to keep your presentation within limited timeframe in order not to turn off (bore) your audience.

ix. **Questions:** The presenter should try to keep questions at the end of the presentation, so as to have enough time to finish the presentation. Asking or taking questions within the presentation period can unnecessarily prolong the presentation.

x. **Apply psychology:** It is also important to focus and monitor your audience when presenting your slideshow. This is necessary in order to know the next method to adopt so that your audience will not be frustrated.

Solutions in Using PowerPoint in Teaching/Learning Process

A lot of efforts are being made for PowerPoint presenters to deliver a successful presentation to their audience without much hindrance. Outlined below are some salient points to be considered for effective PowerPoint presentation.

1. **Avoid parrot powerpoint:** Many presenters write too many words/texts on each slide; they stand in front of their audience and read them word-for-word from the slide. The audience oftentimes sees the back of the presenters rather than their faces. Avoidance of common use of excessive texts/words in a slide makes a good presentation.

2. **Limited text lines:** A good PowerPoint presentation demands the presenter to keep his/her audience within a number of lines of information per slide. Choosing few lines of information will make the presentation simple and clear. In fact, for simplicity, it is advisable to exceed 6 line s on a slide.

3. **Font size:** Appropriate font size is essential for a good presentation. It will be unfair to use a font size that your audience cannot read easily from a distance, noting particularly that some of your our audience may have bad eyesight. Hence, it will be appropriate to choose the font size that will meet the objective of your presentation. Most fonts need to be within 24 - 60 points for good visibility.

4. **Default templates**: Using the styles of the default templates can significantly improve the clarity and structuring of any presentation.

5. **Font type and style:** Proper choice of font type and style adds glamour to any PowerPoint presentations. Over stylistic font styles, especially scrip-like styles are very repulsive or disgusting to the audience. The choice of fonts, such as, "Times New Roman", "Arial", and "Helvetica" is highly recommended for users. Furthermore, the use of Arial Black for headings can add beauty to presentations. It is also suggested not to mix fonts, unless it is for presentation of quotes.

6. **Upper cases:** It is not advisable to use upper cases (i.e., capital letters), especially for online presentations. Capital letters are harder to read and do not conform to online etiquettes. However, upper cases could only be used for occasional emphasis.

7. **Add bullets/short sentences:** To make a good presentation, appropriate use/choice of bullets or short sentences will make more meaning for the audience. It will be interesting for your audience to see your points bulleted during presentation than to listen to you read slides full of texts. It is advised to remove articles, such as "the" and "a" to minimize the word count in a line.

8. **Numbering:** Adding numerals, which sometimes takes the place of bullets, makes PowerPoint presentations clearer for the audience.

9.   Graphic(s): Beakes (2003) noted that a picture can be worth a thousand words. The use of graphic material minimizes the use of words and adds flavour to your presentations. However, adding many graphics in a slide should be avoided. Graphics should be well labeled and contiguity principle should be applied while labelling your graphics. It is advised not to add more than two graphics in a slide, unless on unavoidable circumstances.

10.   Font & background colour: One of the misuses of the PowerPoint presenters is the use of font colours against awful backgrounds. Presenters should not use more than two text colours in a presentation unless on extreme cases (emphasis). It will not be out of place to see wrong combination of font colours upon terrible backgrounds, such as: Blue upon Purple, White upon Light green, Green upon Light blue, Blue upon Tan, White upon Yellow, etc.

11.   Texture backgrounds: Good texture backgrounds, just like the default backgrounds should be chosen. For instance**,** blue upon white texture, white upon purple texture provides a very good visibility for your audience.

12.   Spelling/grammar: Grammar and spelling in the presentation should be properly checked knowing that your presentation represents your personality. Presentation that is full of grammatical/spelling errors will not speak well of the presenter.

13.   Number of slide: The number of slides to be used in a presentation should be reduced to the barest minimum in order not to bore the audience. It is recommended that no one slide should have more than 6 lines of text.

14.   Software incompatibility: In case of incompatibility of the computer or the multimedia projectors, presenters should come to presentation center/location with their own computer (laptop) to avoid media and application mismatch.

15.   Backup: In case of equipment breakdown or malfunctions, a backup should be provided for any eventuality. This usually happen and will continue to occur.

16.   Virus: To avoid the problem of the software/files being infected, presentation files should be scanned before the presentation time. Again, CDs should be used to store files since they are fairly robust medium, and unaffected by magnetic fields.

17.   Multimedia bulb failure: Organizers of conferences, seminars, workshops, or projector owners should have additional bulb to avoid sudden bulb failure. This is one of the worst things that will happen in any presentation centre.

18   Limited slides: Do not use too many slides. An average of 15-20 per 50 minute presentation is a good guideline if using design template rules (Race 1999 and McCarthy & Hatcher, 2002).

19.   Know your audience: Know the level of your audience at which the presentation is aimed at and develop the content to suit the audience.

20.   Speech speed: You are advised to speak at a normal pace; do not deliver your material too fast or too slow. This is one of the most problems commonly encountered while using PowerPoint as presentation software.

21.   Information overload. PowerPoint slides should not be overcrowded with texts and graphics in order not to turn off the audience. The need for every PowerPoint presentation is to focus students or audience attention on key subject matters or concepts. The details should be left for lectures and textbooks or such related media.

Future Use of PowerPoint in Nigeria
        There is no doubt that conventional media technologies can no longer meet the current needs of our educational system. MS PowerPoint application software serves as an alternative to traditional teaching and learning strategies. Its use as information delivery programme has started gaining momentum, particulary in institutions of higher learning. The ability to use PowerPoint to support learning is influenced by both staff and students' technical ability. More awareness therefore needs to be created; teachers, professionals and students should be trained on the effective and efficient use of PowerPoint software to make it more meaningful in the teaching and learning process. The technology, if properly applied, with technical capability required and associate multimedia components, the use of PowerPoint, especially in Nigeria will continue to be one of the major instructional delivery system at all levels of our education systems.

Summary
        PowerPoint is a quick and easy way to organize ideas and information for a specific audience. It is designed as a visual aid to learners. Graphics, diagrams and chats are better presented via PowerPoint than the conventional chalkboard in view of the fact that it will take a long time to produce such image on a chalkboard during lectures. The application has been criticized for several reasons. Never the less, the criticisms levelled against PowerPoint as instructional and presentation software, its vital use within and outside the classroom can not be compared to previous methods. Till today, PowerPoint is acclaimed to be one of the most powerful presentation package ever invented in the 21st century. In summary, the authors have outlined its

major merits and demerits and suggested some vital questions to be considered before embanking on creating a good presentation. Solutions for effective PowerPoint presentation and its future use in industry and education process were enumerated. The authors agree with the words of Patrick Winston, "If you allow your PowerPoint to upstage you, then the students will turn you out and they will miss the important material (*http://www.titc.ttu.eddu/teach/TLTC%20Teaching%20Resources/ using_ powerpoint*). The authors are of the opinion that the merits of PowerPoint as a teaching/learning program outweigh its demerits if properly applied in the teaching and learning process.

References

Active Lecturing - the potential of powerpoint. Received 8 January, 2017, from *http://www1.umn.edu/ohr/teachlearn/tutorials/powerpoint/lecturing/*

Advantages and disadvantages of powerpoint. Retrieved 4 January, 2017. from *https://www.boundless.com/communications/preparing-and-using-visual-aids/using-powerpoint-and-alternatives-successfully/advantages-and-disadvantages-powerpoint/*

Alster, L. (2002). Power to the pupils. Times Educational Supplement. Retrieved 2 August, 2016, from *http://www.tes.co.uk.; http://cte.udel.edu/sites/cte.udel. edu/files/u7/v16n3.*

Beakes, G. (2003). A picture is worth a thousand words. A personal view of using images in the teaching of the biological sciences. BEE-j, 1 (1), 15p. Retrieved 15 November, 2013 from *http://www.csun.edu/science/ref/presentation/powerpoint/powerpoint_use_ab use.pdf andhttp://bio.ltsn.ac.uk/journal/vol1/beej-1-3.htm*

Clark, R. C. and Mayer, R. E. (2008*). E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning, 2nd ed. Sanfrancisco*: Pfeiffer.

Eugene V. Gallagher and Michael (n.d.). PowerPoint: Possibilities and problems. Retrieved 12 January, 2017. from *http://cte.udel.edu/sites/cte.udel.edu/files/u 7 / v 16n3.htm*

Finkelstein, E. (2003). *How to do everything with Microsoft office PowerPoint 2003*. New York: McGraw-Hill

Garmston, R. (2000). Ouch!: These six slips can bruise and strain a presentation. *Journal of Staff Development, 21(4), 76 -77. Retrieved 10 January, 2017. from http://cte.udel.edu/sites/ cte.udel. edu/files/u7/v16n3.htm*

Gupta, V. (2008). *Secret guide to computers*. New Delhi: Dreamtech Press.

Harrison, A. (2008). Power up! Stimulating your students with powerpoint: Learning & leading with technology, 26(4), 6-9. Retrieved 3 December, 2013 from *http://cte.udel.edu/sites/cte.udel.edu /files/u7/v16n3.htm*

Jones, A. M. (2003). The use and abuse of PowerPoint in Teaching and Learning in the Life Sciences: A Personal Overview. BEE-j Volume 2: November 2003. Retrieved 16 September, 2016 from *http://bio.ltsn.ac.uk/journal/voln/beej-2-3.pdf*

Keller, J. (2003). Killing me microsoftly: Almost nobody speaks in public anymore without using PowerPoint. But some liken the program to a cognitive Veg-O-Matic that slices and dices human thought. *The Chicago Tribune Magazine* (Chicagoland final ed.), 8. Retrieved 2 September, 2013 from *http://cte.udel.edu/sites/cte.udel.edu/files/u7/v16 n3.htm*

Lee, J. (n.d.). Advantages and disadvantages of using powerpoint. Retrieved 14 January, 2017 from *http://www.apsense.com/article/advantages-and-disad vantages-of-using-powerpoint.html*

Lowry, R. (2003). Through the bottleneck. ILTHE Newsletter 11, Summer 2003, p9. Retrieved 30 September, 2016 from *http://www.csun.edu/science/ref /presentation/powerpoint/powerpoint _use_abuse.pdf*

McCarthy, P. & Hatcher, C. (2002). Presentation skills. London: Sage Publications. Retrieved 10 December, 2016. frome http://*bio.ltsn. ac.uk/journal/voln/beej-2-3.pdf*

Mason, R., & Hlynka, D. (2008). PowerPoint in the classroom: Where is the power? Educational technology, 38(5), 42-45. Retrieved 3 January, 2017. from *http://cte.udel.edu/sites/cte.udel.edu /files/u7/v16n3.htm*

Mottley, J. (2003) Developing self-study materials with powerpoint. LTSN Bioscience Bulletin, 9, Summer 2003, p9. Retrieved 7 July, 2016. from *http://www.csun.edu/science/ref/presentation/powerpoint/powerpoint_use_ab use.pdf*

Race, P. (1999) 2000 tips for lecturers. London: Kogan. Retrieved 27 December, 2016 from *http://bio.ltsn.ac.uk/journal/voln/beej-2-3.pdf*

Szabo, A. & Hastings, N. (2000). Using IT in the undergraduate classroom: should we replace the blackboard with PowerPoint? Computers and Education, 35, 175-187   Retrieved 16 February, 2017 from *http://www.csun.edu.//ref/ presentation/powerpoint/powerpoint_use_abuse.pdf*

10 Common powerpoint problems and their solutions. Retrieved January 25, 2017 from *http://www.   onppt.com/ppt/article1011.html*

Tips for creating and delivering an effective presentation. Retrieved 7 January, 2016 from   *http://www.office.microsoft.com/en-1001/powerpoint.help/tips-for-creating-and-delivering-an-effecive-presentation.HD010207864.ASPX*

Tufte, E. (2003). The cognitive style of powerpoint. Cheshire, CT: Graphics Press. Retrieved 15 January, 2017 from *http://cte.udel.edu/sites/cte.udel.edu/ files/u7/v16n3.htm*