Professor Ben Edwards

Notes on using the IMRAD format, or How to write a kick *@$ scientific research paper

(As outlined by Dr. John Weber, GVSU, and containing many excerpts from Day, R.A., 1988, How to write and publish a scientific paper, 3rd ed., Oryx Press)

FORMAT

- Format for: flow, clarity, organization, and completeness

- Use the **IMRAD** (Introduction, Methods, Results, and Discussion) "road map".

"*... the preparation of a scientific paper has less to do with literary skill than with organization.*" - Day, R.A., 1988

- Enrich general **IMRAD** sections with more specific ***subheadings*** to *lead* readers through paper.

- The logic of the **IMRAD** format (from Day, 1988):

    - What question (problem) was studied?
    - How was the problem studied?
    - What were the findings?
    - What do these findings mean?

- The logic of the **IMRAD** format follows the logic of the scientific method!

- Stuff in addition to **IMRAD** that is also required:

    - **Title**: a label, should be specific, not a sentence.

    - **Abstract**: a table of contents in paragraph form, a general map for readers.

    - *Suggestion*: Prepare the **title** and **abstract** *after* the paper is written!

    - *Suggestion*: *After* you write your paper, set it aside. Ask yourself the four **IMRAD** questions outlined above. Formulate brief, succinct answers. This *is* your abstract!

INTRODUCTION

- This section should be *greatly expanded* in review papers and student library research papers!

- **Purposes** (after Day, 1988):

1. To provide the rationale for your study. To state briefly and clearly your *purpose* for writing the paper. To *hook* the reader: Why did you choose this subject, and why is it important?

2. To supply readers with enough background information so that they can understand and evaluate the significance of the problem you address, and the results of your study without going back into the literature.

3. To briefly state the methods of investigation, results, and principal conclusions suggested by the results.

- Briefly, the purpose of the introduction is to provide readers with a *road map* of what's to follow!

METHODS

- *Remember*: this section may be very short in a student library research paper or review paper.

- **Purposes** (from Day, 1988):

1. To describe fully (and defend if necessary) the "experimental design".
2. To provide enough details so that future workers can repeat your "experiment" and, hopefully, get the same results!

"*... the cornerstone of the scientific method requires that your results, to be of scientific merit, must be reproducible....*" - Day, R.A., 1988

"*... the potential for producing the same, or similar, results must exist, or your paper does not represent good science.*" - Day, R.A., 1988

" *Scientific inquiry requires investigators to challenge the validity and interpretation of evidence; hence the name **re**search.*" - W.G. Watson, quoted in Day (1988)

- **Suggestions** (from Day, 1988):

1. This is the first section of the paper in which ***subheadings*** should be used.
2. *Do not* make the common mistake of mixing up some of the **R**esults in this section!

RESULTS

- This section make up the *core*, the *data*, of an original research paper. It may be short, or even left out, in a library research paper or review paper, especially if you are mostly reviewing earlier interpretations (implicitly trusting *all* that of the data that went into making them is OK!).

- **Suggestions** (from Day, 1988):

1. Present representative rather that endlessly repetitive data.

" *The compulsion to include everything, leaving nothing out, does not prove that one has unlimited information; it proves that one lacks discrimination.*" - S. Aaronson, 1977, quoted in Day (1988)

2. Strive for clarity.
3. Avoid redundancy.

DISCUSSION

• This typically makes up the *largest part* of student library research papers.

• Because you discuss findings and interpretations of *others*, as well as *your own* ideas, it is ***imperative*** that you make it *crystal clear* (through careful and proper citation - see below) who's words, ideas, interpretations, and data belong to whom. *This is where most undergraduate students run into trouble*!

• Information that should be in the **D**iscussion section (from Day, 1988):

1. Present the principals, relationships, and *generalizations* shown by the **R**esults. *Discuss*, do not simply restate the **R**esults.
2. Point out any exceptions, unsettled points, and lack of correlation. *Do not* try to cover up or fudge data that do not quite fit your "story"; this is *bad* science, and it will haunt you.
3. Show how your results and interpretations agree, or contrast, with earlier work. Discuss why.
4. Discuss both theoretical and practical implications of your work.
5. "*State your conclusions as clearly as possible.*"
6. "*Summarize your evidence for each conclusion.*"
7. Discuss the significance of your results. Don't leave readers asking themselves "So what?" after reading your paper!

HOW TO CITE REFERENCES

• Restated, it is ***imperative*** that you make it ***crystal clear*** who's words, ideas, interpretations, and data belong to whom. Do this by citing properly.

• ***Be specific***!
• *Don't be sloppy*!
• *If any ambiguity at all remains you have* ***not*** *done your job properly*!

• Generally in geology we use the "**Name and Year System**", e.g.:
  • Smith and Jones (1950)
  • Smith and Jones (1950a), and Smith and Jones (1950b)
  • Smith et al. (1950)

• Some comments on *style* (*i.e.*, ***How to be specific***):

" *Some authors get into the habit of putting* ***all*** *citations at the end of sentences. This is* ***wrong***. *The reference should be placed at the point in the sentence to which it applies.*" - Day, R.A., 1988

• Day (1988) gives the following example taken from Michaelson (1986):

WRONG: " We have examined a digital method of spread-spectrum modulation for multiple-access satellite communication and for digital mobile radio telephony."

MUCH BETTER: " We have examined a digital method of spread-spectrum modulation for use with Smith's development of multiple-access communication [Smith, 1950] and with Brown's technique of digital mobile radio telephony [Brown, 1951]"

- Remedies for some of the most common undergraduate student mistakes:

1. It is ***not*** proper to simply stick a "(Smith, 1950)" at the end of an entire paragraph or sentence in which the ideas (and especially words!) come largely from "Smith (1950)". This is *plagiarism*!

2. In addition to practicing careful and precise citation, it is also important to know *when* and *how* to use ***direct quotes***.

- *When*? Use direct quotes whenever an original statement is so precise that restating it in your own words (with, of course, a proper citation!) would destroy or alter its precision or meaning.

- *How*? To be crystal clear and precise about what words belong to whom (*this is really important stuff*!), great pains are taken to make direct quotes *stand out* from the other surrounding text in scientific papers.
  - Put *quotation marks* around the "quote".
  - *Indent* the *entire* quote one or two tabs right of the other text in your paper.
  - Make quote *1 to 2 font sizes smaller* that the other text in your paper.

Guidelines for Authors of Papers Submitted to the *Geological Society of America Bulletin*. Part 2

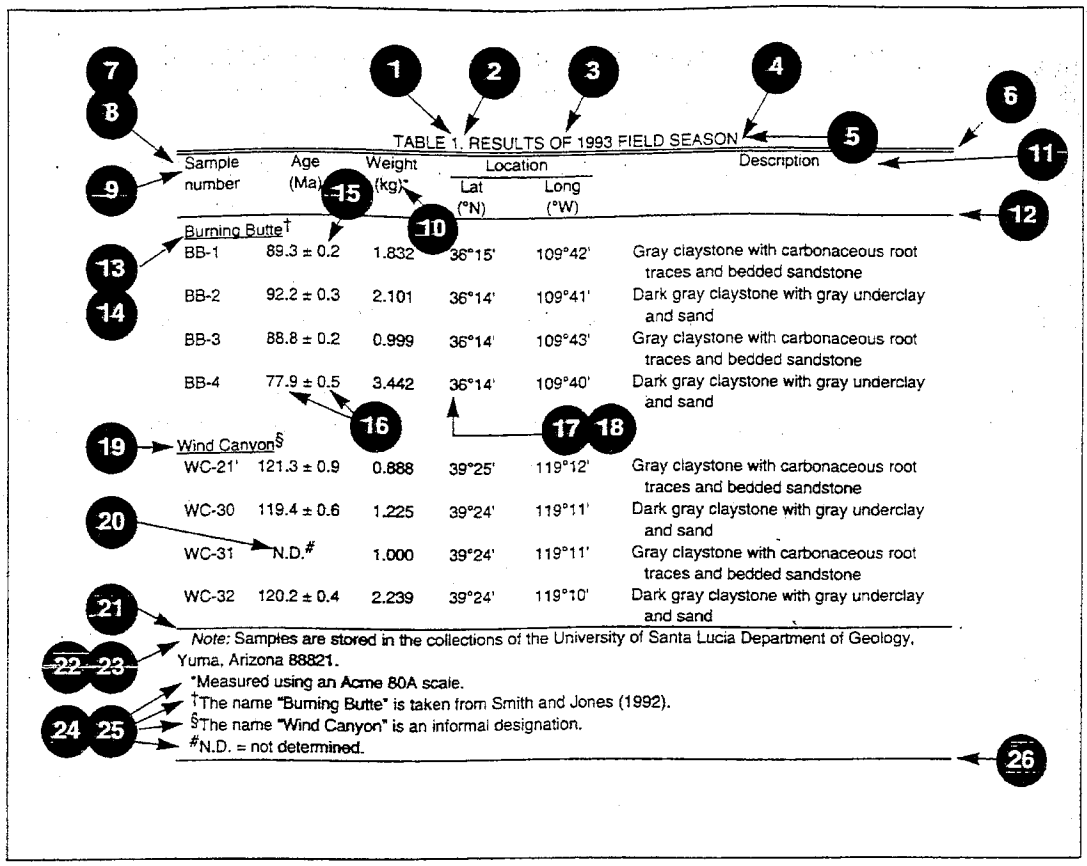

TABLE 1. RESULTS OF 1993 FIELD SEASON

Sample number	Age (Ma)	Weight (kg)*	Location Lat (°N)	Location Long (°W)	Description
Burning Butte†					
BB-1	89.3 ± 0.2	1.832	36°15'	109°42'	Gray claystone with carbonaceous root traces and bedded sandstone
BB-2	92.2 ± 0.3	2.101	36°14'	109°41'	Dark gray claystone with gray underclay and sand
BB-3	88.8 ± 0.2	0.999	36°14'	109°43'	Gray claystone with carbonaceous root traces and bedded sandstone
BB-4	77.9 ± 0.5	3.442	36°14'	109°40'	Dark gray claystone with gray underclay and sand
Wind Canyon§					
WC-21'	121.3 ± 0.9	0.888	39°25'	119°12'	Gray claystone with carbonaceous root traces and bedded sandstone
WC-30	119.4 ± 0.6	1.225	39°24'	119°11'	Dark gray claystone with gray underclay and sand
WC-31	N.D.#	1.000	39°24'	119°11'	Gray claystone with carbonaceous root traces and bedded sandstone
WC-32	120.2 ± 0.4	2.239	39°24'	119°10'	Dark gray claystone with gray underclay and sand

Note: Samples are stored in the collections of the University of Santa Lucia Department of Geology, Yuma, Arizona 88821.

*Measured using an Acme 80A scale.

†The name "Burning Butte" is taken from Smith and Jones (1992).

§The name "Wind Canyon" is an informal designation.

#N.D. = not determined.

Parts of a typical table. Numbers in dark circles are explained by numbered items in the text. This table was produced using the Helvetica typeface.

- Tables should replace text, not duplicate it.
- The main parts of each *Bulletin* table are the title, headings, body, and footnotes.
- Each part is separated from the others by horizontal lines.

The following general rules apply to all tables:

- Use a sans serif roman type such as Helvetica regular or Arial. Do not use a narrow or compressed version of that typeface.
- Use italic type ONLY IF specifically required (e.g., genus and species names).
- Do not grid the table with horizontal and vertical lines.
- Use abbreviations ONLY IF REQUIRED by limited space. Define uncommon and special abbreviations in footnotes.
- Use the word *and* rather than ampersands (&).

TITLE

1. Number tables in the order in which they are cited in the paper. The numbering scheme should reflect each table's physical location, as follows:
   a. Tables in main text: start with "TABLE 1."
   b. Tables in Appendix: start with "TABLE A1."
   c. Tables in Data Repository: start with "TABLE DR1."
2. Follow the number with a period, then the title.
3. Capitalize all lettering in the title, except the symbols for chemical elements (e.g., Na) and abbreviations for years before present (e.g., Ma and ka).
4. Do not use a period after the title.
5. Center the table number and title on one or more lines at the top of the table.
6. Separate the title from the rest of the table with a double horizontal line.

Part 1 of these guidelines appeared in the August 1996 *Bulletin* (v. 108, no. 8, p. 1068–1072).

HEADINGS

7. Start all column headings just below the double horizontal line.
8. Make the heading for the first column flush left; center all other column headings.
9. Use only an initial capital letter for each heading, unless other capital letters are required (e.g., formal names or chemical symbols).
10. Abbreviate units of measurement and place them in parentheses on a separate line just below the rest of the heading.
11. Use a spanner heading above adjacent columns with elements in common. Underline the spanner. Each column should have its own separate heading beneath the spanner.
12. Separate the headings from the body of the table with a single horizontal line.

BODY

13. Start all columns just below the single horizontal line at the base of the column headings.
14. Make the first column flush left and center all other columns.
15. Do not show units of measurement in the column if they can be abbreviated and placed in parentheses just below the column heading.
16. Align columns of numbers on the decimal. Use a zero before the decimal point for values less than one.
17. Align text entries on the left and indent each line after the first.
18. Use only an initial capital letter for each entry, unless other capital letters are required.
19. Separate sections of the table body (optional) with line spaces. Label these sections (optional) with an underlined heading that is flush left.
20. Do not leave blank spaces in the body of the table. These should be marked "N.D." (no data), "N.A." (not applicable), or otherwise as appropriate, and the abbreviations should be marked with a footnote for explanation.
21. Follow the body of the table with a single horizontal line.

FOOTNOTE SYMBOLS

- If several items in a table require footnotes, use relative position in the table to determine the order in which footnotes are assigned. Start at the top of the table, work from left to right, then from top to bottom.
- Use the following sequence for footnotes: * (asterisk), † (dagger), § (section mark), # (pound symbol), **, ††, §§, ##, ***, †††, §§§, ###, and so on.
- If asterisks already appear in the table, do not use them in footnotes; start footnotes with a single dagger (†).
- If you are unable to generate daggers and section marks with your computer, use only asterisks and pound symbols.

FOOTNOTES

22. Treat each footnote as a separate paragraph: Indent the first line three spaces and end the footnote with a period.
23. Place general information about the table in the first footnote. Precede this entry with *"Note:"* in italics rather than with a symbol.
24. Footnotes should appear in the same order as the symbols were used in the table.
25. Use only an initial capital letter for each sentence in each footnote.
26. Follow the footnote section with a single horizontal line.

PREPARING TABLES FOR REVIEW

- Prepare tables as you normally would, except that tables should have double line spacing.
- Use as many pages as necessary for large tables.
- Do not place more than one small table on a page.

PREPARING FINAL, CAMERA-READY TABLES

- Use 7 point type and single line spacing.
- Minimize the space between columns.
- Use a laser printer and high-quality laser printer paper to print the table.

TABLES CREATED USING MICROSOFT WORD

- We prefer tables created with Word's table function.
- When drawing the horizontal lines separating parts of the table, highlight the cells to be underlined. Then choose "format," "borders and shading," and 3/4 point single or double lines.
- Save each table as a separate computer file.

Professor Paul Gleed

GRADING RUBRIC FOR STANDARD ESSAYS

An "A" paper:

Most likely a straight "A" paper displays all of the following characteristics, while an "A-" essay displays most of them.

Thesis: Your argument is very rich, sophisticated and highly original. Indeed, I have likely never seen it before in a student essay. Your insights help me understand the text better than I did before I read your essay. If you are exploring a connection between two texts, the ideas reveal something new about each individual text that most likely could not have been seen without the comparison.

Use of primary texts: You have used the primary text(s) to support your argument, of course. But beyond this, you display an acute sensitivity to the possibilities of the text and, through numerous extended passages of close reading, work to reveal the complex network of ideas at play within the text. Your insights into the texts will reach far beyond class discussion.

Use of secondary texts (if required): You understand the secondary sources and integrate them into a debate. You do not always agree with the critics you include in your essay, but, rather, thoughtfully engage them sometimes as an opponent.

Organization and coherence: Though you do not hide from or flatly dismiss alternative ways of seeing the texts, you are committed to your argument and passionately pursue it. The course of the paper sees a consistent and well mapped development of the argument.

Style: This paper is virtually flawless in mechanical terms; it has been proofed and is free of typos and spelling mistakes. The writing is mature and lively. The paper is fully in line with MLA format and contains a Works Cited page.

Overall: A genuinely excellent achievement.

A "B+" paper:

Most likely a "B+" paper displays all of the following characteristics, while a straight "B" essay displays most of them.

Thesis: While the argument may not be as "new" or unique as an "A" paper, it is still highly individualized and goes some way beyond the ideas discussed in class—though it likely relies on them to a degree. The thesis is still sophisticated, but perhaps lacks the reach or ambition of an "A" paper.

Use of primary texts: You display a clear familiarity with the primary text(s) at hand and use numerous examples from the text to forward your argument (probably from many

points throughout the text, unless the thesis specifically demands a localized focus). You may not, however, be using sufficient close reading or highlighting the nuances latent in the language of the text.

Use of secondary texts (if required): You understand the central arguments made by your secondary authors, but they are more or less "plugged in" to the essay in a supporting role rather than actively engaged in debate.

Organization and coherence: The argument runs smoothly, though there may be some moments of incoherence or deviation.

Style: You write well and have taken care with the editing of the essay, though there may be a handful of errors. The style is solid and competent, but not necessarily lively or entertaining.

Overall: A very respectable piece of work.

A "B-" or "C+" paper:

Papers in this range likely display to a greater or lesser degree the following traits:

Thesis: The argument is not especially original and is most likely a rehearsal of ideas discussed in class. The ideas may be fine but do not display any real sense of adventure.

Use of primary texts: To some extent, the use of primary texts in this grade range probably displays gaps in knowledge, understanding or reading. Though you are quoting from the text(s), you are doing so at arms length, so to speak, and are probably not working in a sustained way with the finer details of the text.

Use of secondary texts (if required): Your use of secondary texts may appear a little haphazard or even random. It may even be that you do not fully understand the material you are inserting into your essay and do not engage with it in any way.

Organization and coherence: Mistakes may reveal a rushed or careless composition. The argument may not be sustained throughout the essay—perhaps you even end up arguing something different by the end of the paper.

Style: It may well be that the writing in this paper lacks sophistication, perhaps showing evidence of repetition or tired and formulaic language.

Overall: Though this paper certainly has strengths, it needs more work to raise it above average.

A paper at "C" grade or below:

Papers in this range likely display to a greater or lesser degree the following traits:

Thesis: A weak thesis or no thesis at all. The essay may be little more than a collection of points and observations. Perhaps these ideas are connected by a common theme, but they may also suffer from a more serious disconnect.

Use of primary texts: The use of primary texts here, rightly or wrongly, suggests a lack of critical engagement on the writer's part—perhaps even signaling a limited or superficial knowledge of the text(s).

Use of secondary texts (if required): Secondary authors have probably not been integrated into the essay successfully, if at all. Their presence in the essay reveals little more than that the writer was required to put them in.

Organization and coherence: Essays in this grade range probably suffer from varying degrees of disorderliness. There may be a sense of the "rollercoaster" movements of an essay written in short time or without much preparation.

Style: Perhaps the presentation and mechanics were highly flawed; quite likely the writing suffered from a general lack of excitement and energy.

Overall: Although the essay may have had its moments, there were some serious flaws in this work that outweighed the good.

Dr. Paul Gleed

Tips for Writing Essays

Textual analysis and research papers make up a large part of the writing you will do in the humanities. What follows is a detailed guide to this kind of writing, useful both in preparing to write and in revising your papers. If you keep any handouts from this course, I hope it is this one. While it is by no means exhaustive, it does cover nine fundamental issues that students must address in their development as college writers. These "Big Nine" will form the core of our writing goals this semester, and we can be confident that if we make progress in these nine categories we will have become significantly more successful college writers.

1) Organization/ Getting started: a plan. Taking the time to make a good plan will, not surprisingly, actually **save time!** If you take half an hour to plan your essay you will save a great deal of time when writing it (no sitting around thinking of what to say next for hours, or waffling for a page about something unconnected to your piece, or throwing ideas out in a disconnected and unstructured way), and will produce, as a result, a much better final product. Try to begin by brainstorming ideas and gathering them together in a list of points and themes you want to include in your writing. After this, order them in a sequence that seems like it might work well as a 'map' for writing your essay—follow it point by point, and if it goes well you will have probably avoided many problems of logical movement, transition, repetition, etc. We'll perhaps talk about this (and model it) in class.

2) The introduction: A good introduction gets things going well. Take time to find a nice paragraph, set a good impression, and establish the tone and quality of the essay: first impressions count! Get right to the subject matter—if your subject is Hamlet's madness, don't bother with unimpressive general statements like:

> *Shakespeare's plays have always been viewed as the best ever.*

or:

> *Throughout history Shakespeare's* The Merchant of Venice *has been thought anti-Semitic.*

Instead, why not try a question:

> *Despite the many aspects of anti-Semitism in Shakespeare's* The Merchant of Venice, *can we really say the play itself is anti-Semitic?*

Or, as I like to, start with a relevant quotation that gets right to the subject. If my subject was memory in *Hamlet* then a nice opening line might be:

> *"The quality of mercy is not strained," claims Portia during Shylock's trial, "And earthly power doth then show likest to God's /When mercy seasons justice." In this speech we see the hypocrisy of the play's Christians most sharply, and it is this ugly spectacle that we find the strongest case against charges of Shakespeare's anti-Semitism.*

3) Thesis Statement: Ideally your first paragraph will also contain your thesis statement—if not the first, then definitely the second. This is not a fixed rule, and more experienced writers may choose to ignore it, but we should probably follow it. After all, **your thesis is your paper**—only a slight exaggeration! Certainly, it is the motivation for your paper, the point or the purpose. Here are some key points to remember:

I) Your thesis should not be obvious: "Hamlet appears to be suffering from melancholy" is not a thesis. "Hamlet's 'melancholy' is intended to be read as part of the play's discussion of acting" is a thesis!

II) Your thesis should be one that people might agree with or disagree with—there should be room for argument and you should NEED to prove the claim you make in the thesis. Of the two examples given above, no one would argue with the first, but the second could have people talking. At the least, your reader will want to see that you can make a case for your point.

III) It should be specific—avoid general phrases and words if possible. While you probably plan on elaborating later in the essay, all key information is best presented in some way early on.

While some modern readers have tried to save The Taming of the Shrew, *I argue that certain aspects of the play unambiguously condemn it.*

Note that this example doesn't really say too much yet. Save from what? How is it condemned? Which aspects do you mean?

Some recent readers and directors of the play have sought to present The Taming of the Shrew *as nothing less than a feminist text, but this seems wishful thinking at best. They cite in particular the possibility of Kate's resistance, but there is nothing in the final scene to suggest such resistance takes place. Indeed, the final act gives us overwhelming evidence to reject such modern revisionism.*

Note how this second example, while saying much the same thing as the first, tells us so much more and sets up the essay more exactly. This kind of precision is essential if you wish to give your essay substance.

IV) A thesis is more than a theme. Hamlet's madness may be a theme, but you Must have an argument WITHIN that theme, like the ones we see above.

V) Now, annoyingly, remember that one can also have too much. While the thesis must be complicated, sophisticated, it must not be too much to handle in your paper. You must set a task that is manageable. For example, in a class I once taught, students were writing about the novel *Heart of Darkness.* Several students unwisely set out to study both the novel's main characters, Kurtz AND Marlow in a two page paper—this is too much! It's difficult to know what too much is, but usually one can tell if one is honest about it. More really is sometimes less, after all.

VI) State your thesis clearly—and where it is expected-- so that no one can mistake it!!!!

Okay, you say, that's all well and good. But how can I come up with a thesis now that I know what makes a good one? Well, obviously, the best way is to fully engage the material you are working with—explore it thoroughly, *think about it,* and questions or arguments should come to you. However, sometimes that process is blocked or you simply can't turn your curiosity into a cogent thesis. This may be the time for a more formulaic approach, what I call "Thesis generators."

I) As you read, look for reoccurring motifs or themes. For example, "gender." What does the text have to say about gender? If you view the text as its own little world, what shape does gender take in that world? Is it the core of a person's identity? Is it in anyway fluid? Develop you analysis to become a nuanced appraisal of your theme, sharpened to the point of an argument. For example, "In Shakespeare's *Twelfth Night,* gender is seen as a mutable quality, something that can be played with and destabilized, rather than a concrete, organic 'fact'" As you continue with your studies, compile a list of themes that may give you access

to texts: love, death, stages of life, family, work, etc.

II) Bring to the foreground something that appears to be peripheral, a minor character or a neglected scene.

III) Argue against a "standard" reading. So, for example, if a character seems weak and helpless, and is generally agreed to be so, look for ways in which you could make a case for his hidden strengths. This approach is difficult.

IV) Characters rarely stay the same throughout a text, they grow, they mature, they become corrupted or redeemed, etc. Chart this progress, focusing it on a tight claim. For example, "At the beginning of the story Tom can be viewed as confident and strong, though by the end of the story his apparent successes seem to barely mask a growing sense of self doubt."

4) Plot summary: This applies particularly to writing about literature, but even in general it is good to remember that there is a difference between 'observing' and 'analyzing.' Typically in college writing of any sort, analysis (the how?, why?, and what then? questions about things, rather than simply the what? questions) is highly prized. When writing English papers, something peculiar is asked of you: "don't tell me the plot". Years of conditioning have encouraged us to see plot as the most important thing about a book or film, but in the classroom other things matter as well. Imagine yourself coming out of a movie theatre with a friend. If you begin to tell your friend the plot, WHAT happened, he or she will look at you very oddly. What your friend is really interested in is your ideas about the film, not a retelling of the plot. Similarly, when writing an English essay, imagine that your reader has read the book, knows the plot very well, and wants to know what you thought about the book beneath the surface of the plot. If something happened, why is it important? Do any patterns emerge? Ask questions that address meaning rather than plot.

Something very similar can be said about summary of arguments and ideas. If you are writing about an essay you have read, you should not simply tell me what the author was arguing. So if you were writing about an essay that claimed high schools were educating children in the wrong way, it would not be enough to spend the whole essay telling me what the author argued. This would be a summary. Unless you are asked to specifically write a summary of a piece, you will want to make an argument about the argument you have read. So to stick with our example, you might decide to argue that the author's claim—that high schools are educating children badly— is based on outdated information, or a very bad sense of what education should be, etc.

5) Quotation: One of the principle skills this kind of writing will foster is the ability to work with the writing and ideas of others—vital for the research paper, too. When writing English essays use phrases from the book often.

Instead of writing:

Hamlet began to pretend he was mad

Try:

Hamlet put on an "antic disposition."

Integrate quotes fully into the text. Avoid something like this:

The central problem for Raymond is that his mind is sullied with envy. "I am so, so envious of the whole world—everyone"

In the above usage, the quote floats almost independently. It is better to "tie it into the text" like this:

The pervasion of Raymond's all consuming envy is obvious when he claims to be "so, so envious of the whole world—everyone."

Or try phrases such as these:

As Raymond puts it, "...

As Raymond observes, "...

As Raymond states, "...

Such phrases as these are useful when dealing with secondary sources in a research style paper:

As Jonathan Marcus has observed, "there is a direct relationship between the abuse of animals and a person's ability to abuse people" (38).

"There is a direct relationship between the abuse of animals and a person's ability to abuse people," points out Jonathan Marcus (38).

(Note, if I hadn't mentioned Jonathan Marcus in the sentence I would have needed to put his name in the brackets with the page number).

Use plenty of quotes. When you make a lengthy quotation follow it directly by talking about the importance of the quote, interpreting or translating its meaning for the reader. A rule of thumb might be that a block quote warrants at least a full paragraph of commentary directly after it. Be careful, too, that your quotes are relevant to the context you are putting them in (a classic mistake, especially with secondary sources) —the quotations work for you, they have a purpose in your argument, supporting points you have made.

6) Transitions: It is very important in any writing, from newspaper journalism to research papers, that the writing "flows"—a rather vague term which simply means that one feels like one is moving smoothly and logically in a given and controlled direction, rather than being thrown all over the place. Good direction is vital (making a detailed plan will help with this—know in which order you will treat your points BEFORE you begin writing).
Avoid jumps between paragraphs like the following:

...And so it is that Hamlet is always questioning reality. A sense of an unknowable universe is at the heart of the play.

Hamlet is an actor and acting is important in the play...

See how the theme jumps from reality to acting: in your head, as the writer, you may know the connection, but make it ANYWAY! See how much smoother the following version is:

...And so it is that Hamlet is always questioning reality. A sense of an unknowable universe is at the heart of the play.

It is not surprising, then, that in a world where the real and the fake are so weakly separated, actors become metaphors for Hamlet's confusion. Hamlet is an actor and acting is important in the play...

See how the second example uses a sentence like a piece of string to logically tie the two subjects and paragraphs together. This should be done within paragraphs too—make sure that everything is connected to what went before and what comes next. You may need to spot such problems in a second reading of your paper and fix the problems before handing in.

7) Logical cohesion: In a related point to the above material, make sure you do not contradict yourself as you write. It is very easy to say something that in truth damages one's own thesis or argument. Again, this is something that will most likely appear only in a second read through. With the last two points in mind, then, it seems wise to avoid the typical last night writing session. Your paper will be MUCH better if you can put it away for a day or two, then spot and correct mistakes before handing it in. I know that there is not always the time for this, but aim for it. At the very least, give yourself some time to read it and edit it, even if you finished it the night before. The best writers draft their work (which is why we use that method in composition classes), so try to get in the habit of seeing a "finished" product as always being unfinished—frustrating, but a grade winner!
Also, on the matter of logic, do not make sweeping statements that almost certainly are not true. Things like "Everyone believes" or "Throughout history," send off warning bells for readers

8) Style and rhythm: Vary sentence length and avoid repetition: Style is something to work on, but see how the following passage is obviously weak:

> *Hamlet was melancholy. His father was dead and his mother married to his uncle. Hamlet is deeply confused because of this. Hamlet is confused as well because of other betrayals.*

All the sentences are short (not to mention the changing tense—always write in the PRESENT TENSE ("is," "knows" not "knew")). Vary sentence length so that instead of four short sentences, you have one long and one or two short:

> *Hamlet is melancholy. His confusion comes from his father's death and his mother's "o'er hasty" marriage, but other betrayals add to his disorientation.*

See how this is not so "choppy" as the rapid fire action of the first example. See also how I avoided using the word "Hamlet" and "confusion" more than one, keeping the language fresh and new throughout (rather then tired repetitions).

9) Conclusions: As with your introduction, the conclusion is an important moment in the essay. Unfortunately, by the time we get there, we are anxious to put down anything that will allow us to feel we have "finished" (though as I said before, a writer is never exactly finished). It's worth making an effort for, though. View the conclusion like a sports highlights section on a news broadcast—it gives you the bits you need to know. For example, it will give you the teams (your argument), the goals (your main points), and the final score (the progress you made since you initially posed your thesis in the introduction). So, in part, the conclusion sets out the basic problem that was put forward in the introduction, recaps your main points made in the essay, and then makes a "summing up" of what direction your evidence has pointed towards—not THE answer (there probably isn't one), but YOUR tentative answer, the one which seems the most convincing to you.