Introducing the Literature Grid: Helping Undergraduates Consistently Produce Quality Literature Reviews

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Abstract

The literature review or critical review essay is an increasingly common component of the undergraduate political science research paper. Unfortunately very little has been written discussing how such a literature review should be crafted (Knopf 2006). As new and more powerful search engines become available to our students, the difficulty of conducting a search of the relevant literature has been displaced by the complexity of organizing and effectively summarizing the large amount of literature found. This article introduces the Literature Grid, a heuristic device I have developed and provide my students in my undergraduate research design classes that simplifies the crafting of a quality literature review. No longer am I burdened by reading student literature reviews that are either mild modifications of annotated bibliographies or a jumble of references that have no direction or synthesis. By using the Literature Grid my students are able to analyze the relevant literature on their chosen topic based on important causal inferences and variable impacts. My students' literature reviews have become a meaningful segment of their research and have enlivened their independent research to further the field. This article will outline how a Literature Grid is created, what it can and cannot do for your students and provide a practical, easy-to-follow heuristic device that will inspire your students' critical review essays to summarize and engage the current literature.

Keywords

Literature review, review of literature, integrative review, literature grids

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Introduction: Literature Reviews: Near Universal Adoption with Little Design Guidance

The vast majority of academic research endeavors contain some attempt at a review of the relevant literature. Yet little guidance is available on how to write a literature review. (Knopf 2006; Torraco, 2005). The literature shows there are four main types of literature reviews: integrative reviews (Yorks, 2008), systematic reviews (Hemingway 2009; Noordzij et.al. 2009), meta-analyses (Frankel & Wallen 2009) and qualitative reviews (Gay, Mills & Arasian 2006). Which ever of these approaches you adopt, the writing of a quality literature review is challenging for academics and especially so for undergraduate students.

This paper attempts to provide guidance out of this difficulty. The Literature Grid presented is a heuristic device designed to organize and synthesize the relevant literature in the most beneficial manner for the creation of an artful literature review. With the completed Literature Grid as a talisman, the development of a high quality literature review is not only achievable but also enjoyable for both academics and students. This paper proceeds with a discussion of the utility and design of a review of the literature. Next, general guidelines are provided for crafting a literature review that is readable and informative. A literature review should have a narrative format that enhances the understanding of the reader and meshes with the overall theory of the research project it buttresses. A brief discussion of the pitfalls common found in literature reviews, especially those created by undergraduate students in the social sciences, leads the paper to a full discussion of how a Literature Grid can minimize these hazards and optimize the utility of the literature review to the research agenda. A short section of question-and-answer responses is provided to conclude the paper.

Function and Definition of the Literature Review

The literature review serves a number of functions in the research process: (1) to determine what has already been done in relation to your research project; (2) to identify research strategies and procedures that have been fruitful in investigating your topic; (3) to define and measure key concepts; (4) to increase the researcher's depth of knowledge; (5) to position your research in relation to others; (6) to identify seminal works within the research area; (7) to establish trends in the research area; (8) to identify agreeing and opposing viewpoints; (9) to display that research in this area is possible; and (10) to reveal whether research in this area is considered of value. (Notar & Cole 2010).

The literature review (frequently referred to with synonymous terms such as review of literature and research history) is a summary and synthesis of relevant literature on a research problem. It is a coherent, integrated, narrative, interpretive criticism that critiques the status of knowledge of a carefully defined topic of the selected relevant literature. Or more succinctly, a literature review is a coherent synthesis of literature presented as discursive narrative. (Notar & Cole 2010:3).

A good literature review is different than an annotated bibliography. A good literature review does more than simply describe research sources in a list. References are critically analyzed through comparison with other research sources and organized in a manner that guides the reader to a unified conclusion. The literature must be relevant, appropriate, and useful to your research problem. As a result, only clearly relevant research sources should be included. It is a mistake to aim for comprehensiveness over cohesiveness in selecting and including research sources for your literature review. More recent references that summarize and advance research conducted in the past are sufficient. However, seminal research that either established a new strain or track of research or became the take-off point for a significant branch of research should be included no matter the length of time since the research was published.

Getting from a Collection of Sources to a Literature Review with Meaning

The development of a quality literature review is one of the most difficult, yet underappreciated, tasks of the research process. An author is required to use a sophisticated process of selecting, synthesizing and organizing the relevant literature their search process has discovered. (Mertler & Charles 2005). The review should be organized around your primary research theory. Reliance on this theory will organize your entire review. For many students this is a daunting task.

The most frequent approach to crafting a literature review is to group studies into similar topics or subtopics. Once this grouping is accomplished, most writers then detail each resource in reverse chronological order beginning with the oldest and finishing with the most recent. For many authors who follow this technique their literature reviews become an annotated list of resources with little connection except their attachment to the broad research topic. Theory is forgotten and trends within the literature are lost. What is established is a lose collection of citations and related facts that may show exhaustive coverage but little understanding. I equate this development as writing a story through a series of chapters then mixing the chapters on a random basis. A skilled reader may be able to garner a notion of what is included in the literature but only if they are able to patch the narrative together as if reworking a mixed jigsaw puzzle.

As a general guide the author of a quality literature review must engage the literature. She must consider, argue with, compliment and react to each entry. Each source should be a component of the overall argument you are attempting to assert through your own research. Topic sentences that introduce each group or subgroup of the literature should always keep the author's thesis in mind. Major themes identified in the literature should always be related to your own research topic. (McMillan & Schumacher 2010).

There are numerous ways resources could be coded. No matter which coding scheme is used, it should be related directly to your primary research problem.

Coding schemes could organize the literature based on similar results and how each builds upon the work of other studies. Reviews could also be coded according to (1) variables, (2) treatments, (3) research designs and methods, (4) datasets, or (5) any combination of these. (Notar & Cole 2010). The key to a quality literature review is not in its organizational basis but how its is designed to further the understanding of your research project. All references should be critically analyzed for how they relate to your own research and identifying how the author's research fits into the narrative of the topic of investigation.

How Literature Reviews Go Bad

There are a number of errors that frequently occur in reviewing literature and relating it to your research agenda.

- Students find the relevant previous research but do not carefully read the material to gain its import. (Notar & Cole, 2010).
- Students are unable to remember which authors stated which assertions concerning their research topic when they sit down to write their literature review. (Blum & Muirhead, 2005).
- Students do not read critically; they accept each author's assertions without placing those assertions to the test and understanding how differing research resources challenge one another. (Blum & Muirhead, 2005).
- Students do not relate found literature to other studies that confirm, correct or counter its assertions. (Fink, 2009).
- Students are overwhelmed by the complexity of arguments in the literature and instead of breaking the argument down component-by-component, they give up or abandon any attempt at synthesis. (Randolph, 2009).

Each of these errors can be fatal to the completion of a quality literature review. When they are combined, most students find it nearly impossible to complete a literature review that is anything more than an annotated bibliography and does little to advance the argument of their research project. The keys to writing a

quality literature review are (1) systematically coding information from selected studies, (2) developing common measures to describe outcomes in the relevant literature, and (3) evaluating research quality. (Froese, Gantz & Henry, 1998; Notar & Cole, 2010). To alleviate some of my students' frustration, I have designed the Literature Grid as a guide to achieving a meaningful and helpful review of the literature.

Literature Grids

I have developed the Literature Grid as a heuristic device to assist my students in writing quality literature reviews. This device allows my students to visualize the trends in the literature and summarize a tremendous amount of research in a limited space. Most importantly it has enabled my students to envision an enlightened literature review that is manageable and meaningful in relation to their research project. If properly used, the Literature Grid makes the creation of a literature review a surmountable task that is both rewarding and informative.

A literature grid is constructed on a spreadsheet to allow flexibility in length and width. It provides a visual representation of the relevant literature towards any research project and once complete organizes a literature review to maximize its usefulness to the research project. FIGURE I is the template I provide my students in crafting their literature grid. Due to its size, it is imported as a collection of three picture files without interactive capability normally available. A separate Microsoft Excel Spreadsheet is available from the author and located on the APSA Connect and the Social Science Research Network websites.

FIGURE I – Literature Grid Example

Literature Grid Research Question: With respect to undergraduate students at four-year universities, affirmative action programs have had a more significant impact in increasing graduation rates of minority students

Student Name than student characteristics, family characteristics or university characteristics.

H1: With respect to undergraduate students at four-year universities, student characteristics have a significant impact on graduation rates.

H2: With respect to undergraduate students at four-year universities, family characteristics have a significant impact on graduation rates.

H3: With respect to undergraduate students at four-year universities, university characteristics have a significant impact on graduation rates.

#	Author(s) Last Name	Brief Title	Year	Journal Title	Research Design	Dependent Variable	Student Ch SAT/ ACT	SAT Verb	ACT	Talk w/ Facu	Ethnicity
1	Cragg	Influencing Probability for Graduation	2009	Res. High Educ.	Limited Dependent Variable - Logit	Graduate after six yrs with BA/BS	X			X	X
2	Scott, Bailey, Kienzl	Relative Success: Deter. Of College Grad.	2006	Res. High Educ.	Limited Dependent Variable - Logit	Graduate after six yrs with BA/BS	X				
3	Stumpf and Stanley	HS GPA * SAT Predict Grad Rates	2002	Ed. & Psych Meas.	OLS Regression	Graduate after six yrs with BA/BS		X	X		
4	Light and Strayer	Graduation: School vs.. Student Qual.	2000	Jrn Human Res.	Limited Dependent Variable - Probi	Graduate after six yrs with BA/BS	X				X
5	Durlauf	Affirmative Action, Meritocracy, and Efficiency	2008	Politics, philosophy & economic	OLS Regression	Graduate with BA/BNS					
6	Eubanks	Affirmative Action and After	2009	The American scholar	Limited N Case Study	SES by Education Level by Race	X				X
7	Gilroy	Affirmative Action Bans have Affected	2011	The Hispanic outlook in higher education	Case Study	% of Minority Enrollment	X				X
8	Gradin	Poverty Minorities United States	2012	Applied Economics	OLS Regression	Poverty Gap of Minorities					
9	Holzer	Affirmative Action After Grutter	2004	George Mason University civil rights law journal	Focus Group	SES by Education Level by Race	X				X
10	Kamalu	From Bakke to Grutter	2004	The Western journal of black studies	Legal Analysis	Case Analysis					
11	Koepke	RACE, CLASS, POVERTY, AND CAPITALISM	2007	Race, gender & class	OLS Regression	Poverty Rates	X				X
12	Moro	Affirmative Action Competitive Economy.	2003	Journal of public economics	OLS Regression	SES	X				
13	Nighaoui	Affirmative Action: Why Reform	2007	The Western journal of black studies	Case Study	SES					X
14	Sadka	Incorporating Affirmative Action Welfare State	2009	Journal of public economics	Limited Dependent Variable - Logit	Efficacy of Welfare	X				
15	Saporito	Mapping Educational Inequality	2007	Social forces	Aggregate Analysis	Geographic Mapping	X		X		X
16	Scafidi	Race, Poverty, and Teacher Mobility	2007	Economics of Education Review	OLS Regression	Poverty Rates	X			X	
17	Swain	An Inside Look at Education and Poverty	2006	Academic questions	Case study- single	Graduation with BA/BS	X				X
18	Wallerstein	"Redistribution and Affirmative Action	2006	Journal of public economics	OLS Regression	SES by Education Level by Race					X
19	Wickelgren	Affirmative Action: Efficacy	2005	Texas journal on civil liberties & civil rights	Case Study	Graduate with BA/BS					
20	Yun	Affirmative Action's Fate: Are 20 More Years enough	2009	Education policy analysis archives	Casey Study	SES of Graduates	X				X

Limited Value Determinants - Student hours worked per week (1), Student belongs to school club (1), Student Participated in fine arts (1), student participated in university athletics (1), Student SAT Math score (1), Univers

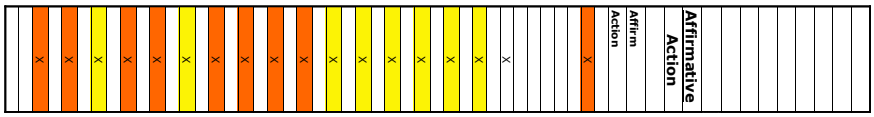
Variable Coding Scheme

Most Important
Important
X - Present but insignificant
[Blank] - variable not included

Independent Variables

aracteristics					Family Characteristics						University Characteristics											
Gender	Age	HS GPA	Neg Self Image		Father's Educ	Moth Educ	Depe Statu	Siblings i College?	Family Income		Tuition Cost	School Ave SAT	School Enroll	% of Gra Students	Public or Private	% Mino	Instr. $/ Student	Student Fac. Rat	Student Accept Ra	Teacher Quality	Multi-cult Program
X					X	X	X				X	X	X		X	X					
X		X									X	X	X	X	X	X	X	X	X		
														X							
X	X					X	X	X	X		X	X				X			X		
					X	X			X		X									X	X
		X	X												X	X					
		X	X		X	X	X						X		X	X					X
			X		X	X	X		X		X										
X								X	X										X		X
			X				X														
							X		X		X						X				
X		X	X				X		X		X										
			X						X												
X	X		X				X														
X			X		X	X	X		X												
		X	X				X	X	X				X		X	X	X	X		X	X
X		X									X										
					X	X	X		X		X										
X																					
													X		X	X	X		X	X	X
X		X	X				X	X	X		X										X

ty Carnegie Type (1, 19), University % Foreign Born (2,7), University M/F Ratio (1), University FT/PT Students (2), University Average Student Age (2)



Elements of a Literature Grid:

- **Research Question** – I ask each of my students to begin with a statement of the primary research question under investigation. I require all my students to insert at the very top of their Literature Grids a clear and concise statement of their research question. I have found that inclusion of this statement in a prominent location continually focuses students back to the main objective of the literature review: to inform their current research agenda and remind the reader of what has been accomplished and what still needs to be established.
- **Reference Number** – I ask each of my students to number each source they locate. I have found through my own research by numbering each resource it is much easier to locate in my file cabinet. By convention I simply write a large numeral on the first page of each resource I find in black marker.
- **Author(s) Last Name** – By recording the last name of every author of each resource, it is possible to quickly realize if a single author appears repeatedly in the found literature. Plus this allows sources to be sorted based on last name which assists in the development of the works cited page. Recording this information also assists in future research to see if this author has published again in this research area.
- **Resource Title** – The complete title or a shortened version of the full title. I prefer students paraphrase the title of the resource so that each resource is quickly identifiable and understandable. This also provides for the development of key words necessary to categorize the current investigation and locate other potentially valuable research.
- **Year Published** – This information allows for sorting in standard or reverse chronological order to track how the field has shifted over time. It enables students to easily develop a resource mapping to visually depict the genealogy of a research field. Also reveals ‘hot’ and ‘cold’ periods in this research area that may indicate how the profession as a whole evaluates research in this area.

- **Journal Title** – Students must list the complete title or a shortened version of the full title. This information shows which academic journals are focused on the research agenda proposed. It also leads to the discovery of additional resources if journal has special editions focused directly on this research project. (The Literature Grid example provided in this paper focuses exclusively on journal articles. Obviously these are not the only resources available. If a student wishes to include a relevant text or website, simple slight adjustments to the Literature Grid are utilized. For this paper, the display of these adjustments adds little to the understanding of the Literature Grid but increases the complexity of the visual display. Feel free to adjust the Literature Grid to fit the type of resources your students have found.)
- **Research Design** – Students must provide a quick summary of the primary research design used in the found resource. As expected this is one of the most difficult areas for undergraduate students who do not have a significant background in the social sciences and methodology to complete. I usually assist my students in identifying the type of research design utilized by each author. Based off the research design categorization found in Johnson and Reynolds (2008: 149), I break all non-experimental research designs into three broad categories: Small-N Designs, Cross-sectional Designs and Longitudinal Designs. Within each of these three categories I further break down the research designs as follows:
    - Small-N Designs
        - Case Studies
        - Comparative Analyses – 2 to 20 Cases
        - Focus Groups – Limited Number of Individuals
    - Cross-sectional Designs
        - Survey/Polls
        - Aggregate Data Analysis
            - Limited Categorical Dependent Variable Models

        - Logit/Probit
        - Other
    - Continuous Dependent Variable Models
        - OLS
        - Other
- Longitudinal Designs
    - Trend Analyses
    - Panel Studies
    - Intervention Analyses

Once students understand the basics of the different research designs they will quickly notice trends in the techniques used. This also assists students in discovering what might be the best method to use to study their own research topic. I find this section helps student break from the mentality of selecting the methodology before the research topic and not letting the research project and the data gathered drive the method chosen.

- **Dependent Variable** – Key with Independent Variables to the Literature Grid! Once my students have found the resources relevant to their research project, one of the first things I ask them to do is to find the dependent variable in each of the studies they are examining. (I have found this is a wonderful learning task!) Once they have identified the main dependent variable in each research resource, they must determine how this variable has been operationalized. This serves several important purposes: first, if they find that the dependent variable is not directly related to their research agenda, it is likely that the resource they found is tangential to their task and it should be considered for omission from their literature review. Second, students quickly realize that how the dependent variable is measured may go a long way into determining the results of that particular study. Third, discovery that multiple resources utilize the exact same or equivalent dependent variable allows for quick comparison and contrast among these studies. Fourth, identification of how the dependent variable is measured

assists tremendously in identifying potential data sources for their own research projects.

- **Independent Variables** – Each independent variable discovered in the relevant literature is given its own column in the Literature Grid. Any independent variables that are identical across two or more resources are consolidated. For example, if several sources include household poverty as a determinative variable, only one column is needed in the literature grid. Of course the development of a research field frequently builds upon previous methods and data so it is quite common for independent variables to be repeated. I suggest that students either make their first several or last few columns under the independent variable section as their most important variables according to their research theory. This allows my students to keep their primary driving factors in their theory in the forefront of the Literature Grid. This can be seen in FIGURE I with the isolation of Affirmative Action Programs. Finally, once all independent variables are identified, I suggest students group the variables into broad categories. For example in the template provided in FIGURE I I have grouped independent variables into the subtopics of Student Characteristics, Family Characteristics, University Characteristics and Affirmative Action Programs.
- **Rating Key** - Every independent variable located within each of the sources of the relevant literature, aside from Limited Value Determinants discussed below, is listed by column in the Literature Grid. Once this accomplished, each of these independent variables is then evaluated on a four category ordinal scale:
    - Most Important – colored orange X
    - Important – colored yellow X
    - Measured but found statistically insignificant - X
    - Not measured in this study – blank cell

  I have chosen to reduce the amount of information contained in my rating key by converting many higher levels of measurement contained in each relevant resource down to an ordinal measure. While this loss of information is

regrettable, I have found that very few students can understand the implication of this loss and the reduction dramatically increases their ability to understand the main import of each of their resources. For example, if an author reports that a logit in a limited categorical dependent model for a particular independent variable is significant to the .001 level, most students do not have the statistical sophistication to properly assess the value of this claim, let alone know what a logit actually represents. Instead, by coding results on a simple ordinal scale students can grasp which variables have influence and which do not.

- **Limited Value Determinants** – in most studies, variables are included in the resource's model but are not found to be statistically significant in relation to the dependent variable chosen. I ask students to create a list at the bottom of the Literature Grid for these variables that are never found to be statistically significant by any of the located resources. In addition, in parentheses after each variable is listed the reference number(s) in which that variable was tested. By listing these variables in the Literature Grid my students are able to track additional variables that might be thought to be relevant in their own model and additionally it displays to my students that not all variables originally hypothesized to be relevant do actually turn out to be so. In addition the removal of a separate column for each of these variables reduces the visual size of the Literature Grid and allows for focus to be directed at those variables that have been discovered to be significant by previous research. Many of my students find the lack of a significant relationship between variables in the model to be deflating when experienced researchers know that this may be as exciting a discovery as its opposite. As a result, I firmly believe it is important to account for these variables in the Literature Grid and suggest they not be discarded completely.

Converting a Completed Literature Grid into a Quality Literature Review

Once an individual has taken the care and effort to create a Literature Grid surrounding their research program, its utility in guiding the development of a literature review becomes apparent. I suggest to my students that their literature review be organized around the main determinants (independent variables) of their dependent variable at the center of their research agenda that have been discovered by previous research. The literature review should be narrative leading the reader to a clear understanding of where the research field has been and why the current research covered in this research project is informative. The narrative is a derivative of the theory presented in the research agenda. As a result, the previous research should be organized on those studies most divergent from the theory suggested and move to those that are most similar to the present study. The Literature Grid makes this organization easy. For example, in the template provided here, the dependent variable is a measurement of undergraduate student success. Four broad explanations are cobbled from the literature: student personal characteristics such as intellectual ability (SAT/ACT scores), family characteristics such as family income and dependency status, university characteristics such as cost and student/faculty ratio, and the presence and type of affirmative action programs. The creation of the Literature Grid enabled these four broad determinants to be discovered. The primary theory suggested is that affirmative action programs are the most important determinant of student success. In writing their literature review I suggest students focus on those authors who stress each one of these factors and why they are drawn to the conclusions they assert. They should conclude their review by assessing the research conducted by authors who agree that affirmative action programs are the most important determinant of student success. This is easily discoverable through examination of the Literature Grid. Each resource has been coded on the independent variables they find very important, important, relevant and irrelevant. This is the color-coding scheme of the Literature Grid. The Literature Grid allows students at a glance to know

generally which authors fall within which camp or research track. Students then can easily list those authors whose research comfortably fits with other researchers and also authors who are clearly opposed on the main determinants of the focus of their study. Students should allow the authors whose research falls within each one of these research tracks to speak to each other and discuss the development and refinement of each track.

Once each intellectual area organized by prime independent determinants is fully discussed, students are guided to allow the research tracks to 'talk' to one another. What common understandings exist within each research track and how are these understandings challenged or discarded when we move to a new research branch? Are assumptions valid within each of the tracks? Are these assumptions explicit or implicit? What are the driving factors for the authors within each of these research areas? Can more unity be achieved? What is left unwritten?

If my students have followed these guidelines their literature review should be both informative and interesting. It will tell the tale of previous research and maximize the relevancy of this narrative to the present research project. It is my hope that the Literature Grid presented here can assist your students and your writing in the manner suggested.

Frequent Questions and Answers

- How are relevant resources found?
    - I have found that the skills of my undergraduate students over the past decade in crafting appropriate search algorithms to find relevant literature has increased dramatically. This is due to a number of factors. First, powerful search engines have been developed and continue to be refined that enable novice users to quickly design a useful search that is productive and discerning. Search tools such as Summon and Google Scholar, to name but two, are remarkably user-friendly and make the search of relevant sources simple and quick. In

addition, the assistance available through the research librarians at my campus and many others cannot be underestimated. Not only are these professionals skilled in the most modern search tools and techniques, in my experience they tend to be very approachable and helpful. I have noticed that students are increasingly more willing to seek out this help on their own over the past decade. Third, repositories of published research have become more accessible through the Internet and interfaces to gain access to this information are becoming more uniform and intuitive. In summary, my students' difficulty is not is discovering resources but in what to do with those resources once they are in hand. Hence the primary purpose of the Literature Grid is to organize and synthesize the found literature in a useful format for the production of a quality literature review.

- How time intensive is the creation of the Literature Grid?
    - It takes a significant amount of time to create a Literature Grid. I make this very clear to my students with repeated exhortations to begin early! I try to make the students see the Literature Grid is an investment that will reduce significantly the time necessary to craft their literature review. There are some time saving techniques that I suggest to my students. First, if students find a text that is relevant to their topic, I suggest investigating whether there is a peer-reviewed published article from the same authors in the year or two prior to the publication of the text. Often the main findings of the text are more skillfully summarized in the published article. Obviously caution must be used here! In addition, I suggest students first skim the material they find and then turn to the concluding section of the material. If a finding in the research is presented in the conclusion it is likely to have been an important finding according to the author. In addition, I explain that the statistical tables that most undergraduate students simply ignore are a great source to find the variables thought relevant by that

researcher. Clearly these shortcuts present an increased hazard of error. With this in mind, they are suggested with warning.

- Can the Literature Grid properly assess qualitative research?
    - The Literature Grid can properly summarize qualitative research as well as quantitative research. Students must delve into the qualitative research material more intensely to find the relevant variables necessary to add the entry to their Literature Grid. This is usually more difficult and time consuming than the analysis of a quantitative study. I find that this is an excellent learning exercise for students in discovering that while qualitative and quantitative have differing methodologies, the basic logic of social scientific investigation remains. Variables abound in qualitative research. These variables however are unlikely to be listed in an easy-to-find table. Digging is required.
- Is there any outside knowledge I should expect my students to know before I ask them to create a Literature Grid?
    - Yes but it is minor. Students should be familiar with the creation and manipulation of a spreadsheet. Instructors might need to give a quick lesson in how to adjust the width of columns or add color to the background of a cell. Fortunately, most students have the computer knowhow to already perform these functions. Other than the basic manipulation of modern spreadsheets, little other technical knowledge is necessary to befit from the use of Literature Grids.
- How can a Literature Grid be modified to fit my particular assignment?
    - In almost any way possible. The Literature Grid presented in this article is an archetype that can be modified to fit the needs of any particular assignment. From the design of the research question to the organization of the material, if another instructor has a different manner of displaying the information or requires the addition or omission of information, go for it. Please don't be limited by the form of the Literature Grid presented here. At its core, it is a heuristic. Heuristics should be adjusted in any manner to maximize their utility.

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