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David B. Ross

Nova Southeastern University, daviross@nova.edu

Melissa Sasso

Nova Southeastern University, ms3303@mynsu.nova.edu

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The Art of Synthesizing: A Masterpiece in the Making

David B. Ross, Ed.D.
Nova Southeastern University
7501 SW 36th Street, Davie, FL 33314
daviross@nova.edu
954-262-8398

Melissa Tara Sasso, M.S.
Nova Southeastern University
ms3303@mynsu.nova.edu
786-543-3619

The Art of Synthesizing: A Masterpiece in the Making

Writing is very important, whether it is to one person or many, even when composing literature for yourself. However, as a college student, you are constantly writing papers for one specific person, which is your professor, but it is imperative to keep yourself in mind as you must proofread your own work for submitting academic work. As a writer, you need to remind yourself that you are communicating to others without being careless (Andersen, 2001; Weinstein & Finn, 2011). Andersen (2001) stressed the importance of knowing and respecting your audience, meet the readers' needs, and uphold your professional quality and standard level of writing. When taking notes and/or conducting research, you will need to interpret this information into your own words while developing your papers; you are required to paraphrase, which is an understanding (i.e., second level of Bloom's Taxonomy Model) of your resources. Weinstein and Finn (2011) stated that once an individual clarifies their opinion of the information, they must "accurately represent" (p. 120) the information as it was presented, without copying information word-for-word. You must also give credit to the research you obtained (e.g., scholarly and non-scholarly, lectures, symposiums) with proper in-text citations to align with the references. You want to write for yourself and have the ability not only to summarize your notes from various resources, but how to synthesize (i.e., the critical level of Bloom's Taxonomy Model) the notes by developing common viewpoints, connections, and/or themes. Figure 1 illustrates the process when one transitions from the various steps of critical thinking. As Wakefield (2015) illustrated, "Each time an article is reviewed, the level of analysis increases in its intensity to create a set of key articles from which to isolate a series of themes and establish whether the papers are robust" (p. 47).

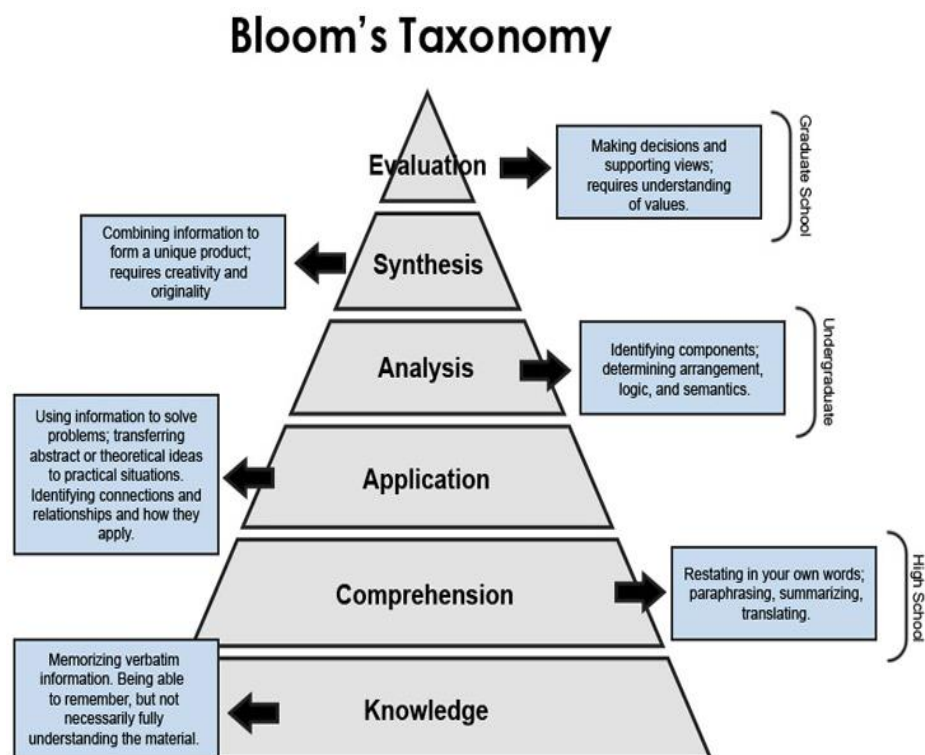


Figure 1. Bloom's Taxonomy

For a larger audience, you could be published in a plethora of scholarly and non-scholarly literature (e.g., a book chapter, book, articles, blogs). More importantly, if you are a doctoral student, you have a larger audience who will be reading your dissertation, which is based on research and methodology to include the synthesis of the literature review. Wakefield (2015) opined that the most crucial aspect of the literature review process is when an individual is capable of synthesizing the literature. Butin (2010) commented on two types of literature searches: a general search (i.e., open-ended search) and an academic search (i.e., closed-ended search). The general search utilizes traditional and academic search engines, whereas the closed-ended search locates other researchers' syntheses. "A general open-ended search should lead you to numerous practitioner resources that will have compiled and synthesized a host of key research on the main topics and themes" that a person can examine (Butin, 2010, p. 65).

Mateos and Sole (2009) mentioned that synthesizing information from different forms of

texts is considered to be a *hybrid* reading and writing assignment. As Spivey (1997) illustrated, creating a text that derives from various differing multiple sources comprises three forms of processes: (a) *organizing*, (b) *selecting*, and (c) *connecting*. That stated, synthesizing, is characterized as not only cognitively challenging, however also more challenging then composing a summary of a single text (Mateos & Sole, 2009). Writing a synthesis in comparison to a summary has further been illustrated within research as an assignment that students are not as familiar in completing as well as a task that was too demanding for both elementary and most college students (Mateos & Sole, 2009). I have found that students feel summarizing an article is synthesizing. I inform students that a summary is more of a lower level exercise than synthesizing, which is a more critical level of learning. According to Bloom's Taxonomy, which was developed in 1956, synthesis is the fifth level of the Taxonomy, only leaving evaluation as the last level (see Figure 2).

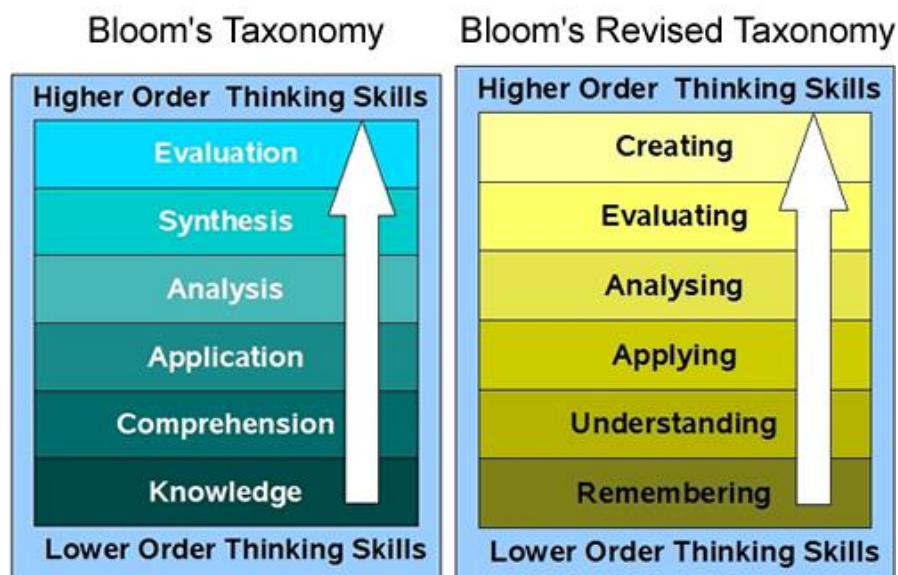


Figure 2. Bloom's Taxonomy vs. Bloom's Taxonomy Revised.

However, in 2001, Anderson and Krathwohl revisited Bloom's Taxonomy by listing synthesis as the last level and the highest level of critical thinking, changing the term to *creating*

(Anderson et al., 2001). Moreover, teachers view synthesis as one of the most difficult forms of an assignment; however, it is also viewed as an assignment that is suitable for widening one's knowledge and critical thinking skills. Spivey (1997) opined that students do not tend to utilize their prior knowledge to process data, except for when it is required to form connections and organize contents.

There are various factors that will determine a student's ability in adequately synthesizing as the following will demonstrate these factors. An interesting finding within Mateos and Sole (2009) literature demonstrated that the ability to synthesize information from multiple texts is associated with one's level of reading comprehension. Furthermore, it was explicated that organization within and between texts plays a crucial part in the ability of one being able to synthesize. This was evident in a study conducted by Nash, Schumacher, and Carlson (1993) in which university students were required to read two descriptive texts and were then asked to write a text that demonstrated a comparative structure. Some students were offered the same structured texts, while other students were offered different structured texts. The results had revealed that students were affected by the structure of the first text that was read, in addition to the students' syntheses being better organized when the texts had the same structure versus different structures.

McGinley (1992) depicted that the quality of a synthesis paper will also differ based on the pattern of reading and writing followed. Therefore, it has been illustrated that when students synthesize by utilizing different sources, university students are found to read and write both *linearly* and *recursively*. It was observed that once students began writing, they continuously sought support by (a) *reading the source texts*, (b) *reading their notes*, and (c) *reading their texts* (McGinley, 1992).

Errors Students Make When Synthesizing

Within Dunkin's 1996 literature, observations were made in regards to the nine types of errors that students make in the three stages of synthesizing. The *first stage* is the primary stage and is the point in which the student researchers the appropriate literature and chooses the items that are deemed suitable for the topic which is to be reviewed. The types of errors found in this stage include: (a) *unexplained selectivity*, and (b) *lack of discrimination*. Similar to the errors that Dunkin illustrated within the first stage, Shellenbarger (2016) explicated that novice writers experience difficulty in synthesizing due to selecting literature that is barely related. This, in turn, poses a dilemma for the student as they attempt to synthesize the information. The *second stage* of errors Dunkin illustrated comprises of the student analyzing the literature attained to identify *context*, *methods*, as well as the *findings* of what each study revealed. It was noted that this stage has the greatest variety of errors made by students in the areas of misclassifying studies, as well as recognizing and reporting findings. The types of errors typical for this stage are (a) *erroneous detailing*, (b) *double counting*, (c) *not recognizing faulty author conclusions*, (d) *unjustified attributions*, and (e) *suppression of contrary findings* (Dunkin, 1996). Similarly, Shellenbarger additionally opined that novice writers also face the challenge of an imbrication of articles with findings that are conflicting. Therefore it has been found that students are either unable to comprehend the differences observed or are incapable of explaining the slight differences found in multiple studies.

According to Dunkin (1996), the final stage is the tertiary stage, and this materializes when the student gathers the findings found within the prior stage to conclude the topic that is being researched. The types of errors found in this stage are (a) substantial errors, and (b) failure to assemble all evidence pertinent to a generalization (Dunkin, 1996). Like Dunkin,

Shellenbarger (2016) further revealed common errors that students make when synthesizing. One of these errors include their inability to comprehend the difference between synthesizing and summarizing and utilize *a cookie cutter approach*. This approach prevents students from connecting required information from the various literature attained and in turn prevents any form of critiquing.

The Creation of Articles and Students' Quotes

Benjamin Franklin once said, *When you are finished changing, you are finished*. I am aware that most people do not like change, especially when conditioned to a certain and consistent task. In *The Dance of Change*, Senge et al. (1999) mentioned that leaders of learning organizations have the knowledge of renewable resources, but the most important resource is the “ability to learn” and “enhance the capacity to learn” (p. 22). For the basis of change in my courses, I decided to enhance my students’ ability to learn how to become better researchers and writers by eliminating a consistent task of the discussion topic/blog format and replace it with article reviews. For the record, the majority of courses have weekly discussion topics for students to write their thoughts, and at times contain supporting evidence, along with added responses by their peers. Within a study conducted by Quitadamo and Kurtz (2007), they commented on the results of how critical thinking and writing skills increased with a writing group compared to a non-writing group. Quitadamo and Kurtz stated, “by focusing on instructional efforts that develop critical thinking skills, it may be possible to increase student performance” (para. 6). Other studies showed a stronger correlation between writing and critical thinking as well as reasoning ability. As I stated, most people do not like change, but I feel change is good, especially when it is relevant to a student’s learning for their course to include their dissertation. For example, when a student completes a class that has 6 to 10 required

blogs/responses, what do most students do with them by the end of each semester? My change from blogs to article reviews is quite simple to answer this question: The students will leave the course with more literature, scholarly references and in-text citations, and the ability to synthesize research for their dissertation. This has created a positive learning of relevance to the students' program and is supported by the following students' quotes:

Learning how to synthesize when writing can be daunting and confusing. Dr. Ross's use of article reviews instead of discussion posts to accomplish this was beneficial on several fronts and refreshing . . . Once you master the article reviews, writing any assignment becomes easier. Thank you, Dr. Ross, for using the article reviews to strengthen my writing and teaching me APA also.

-Ruth Jayson-Polk, *ORGL 8780*

The article reviews were substantially useful as they addressed all the writing skills needed by doctoral students. The article reviews developed synthesis skills which enabled us to summarize scholarly articles and properly synthesize them which could replicate the structure of the dissertation literature review. The value of the article reviews far surpasses the value of discussion postings as the article reviews provide sustainable skills that can be utilized throughout the program, while discussion posts can be limited just to serve the purpose of the assignment.

-Richard Louis, *ORGL 8780*

The article reviews were beneficial to writing and learning how to synthesize as I was actively engaged assimilating and internalizing significant amounts of research. This higher order thinking skill facilitated my evolvement from just summarizing and remembering facts to reaching a more holistic way of writing utilizing a variety of sources to support my ideas. In addition, through the ongoing process of synthesizing, I was able to combine information and reflect on the text as I enhanced by analytical thinking skills.

-Michelle Ivette Marrero, *ORGL 8730*

When researching at the doctoral level, students can often be overwhelmed with the complexity of the data. Through Dr. Ross' synthesis article reviews, we have an opportunity to write contrast and/or parallel views on a single topic that teaches us to better understand the literature. Writing at the doctoral level is not easy. Dr. Ross' synthesis article reviews provide a learning exercise that emerges students in the literature - preparing us for a successful dissertation and scholarly writing.

-Richard Pulido, *ORGL 8780*

As an online student, weekly blog responses turn into formalities. Replying to a classmate's work is beneficial to exchange ideas; however, the personal gain from such conversations is limited to that class or semester. Writing article reviews allowed me to take ownership of my learning. I researched literature in the field I am interested in, and selected articles to synthesize weekly. As a result, I have a bank of scholarly sources, structured and synthesized, that I can use when writing my dissertation. Overall, synthesizing literature as a class assignment equipped me to tackle not only class topics but also prepare sources and quotes for my dissertation.

Good luck! I do hope more classes follow this format to prepare students for their dissertations!

-Lilibet Sosa, *EDLR 8420*

Synthesizing is an important skill to have. Replacing the blogs with the article reviews was extremely beneficial for me to learn how to synthesize and understand the importance of it. It provided me with the opportunity to also synthesize articles that were relevant to my literature review for Chapter 2 of my dissertation. I found the article reviews extremely beneficial.

-Isaida Woo, *ORGL 8730*

Examples of Synthesized Paragraphs

Please review this example of a synthesized paragraph below and pay close attention to the **red highlighted** areas of the two sources of Heaggans (2012) and Woods and Clare (2008). You will notice these sources are from different authors and different years; however, notice their statements align with one another regarding the challenges and unknown changes in

technology. Heaggans mentioned that technology will assist the adult learner *socially*, *physically*, and *mentally*, while Woods and Clare mentioned the terms of *biological*, *psychological*, and *social*.

Heaggans (2012) opined that the baby boomer generation as well as generations prior, discover challenges to stay current with the advancement of technology. The older adults find it intimidating to use technology compared to the younger generations as they need to have the readiness to learn and to develop a knowledge base in experiential learning. There is a need to have some sort of assimilation to deal with change, especially with technology. Woods and Clare (2008) mentioned that as people age, they have several challenges (i.e., *biological*, *psychological*, *social*) that pose anxiety to their "construction of self and personal continuity" (p. 20). Heaggans added that if older adults are taught not to be fearful of the unknown in technology, it would assist them *socially*, *physically*, and *mentally*. In addition, to conform to changes in technology, individuals strategically and actively attempt to change their behavior to deal with the rapid change and need to work with technology. These strategies can assist the aging adult use higher-level functioning skills, especially based on a tech-enabled environment.

In this second example of a synthesized paragraph, notice there are two scholarly sources of Meraz Lewis (2011), and Morganroth and Hanley (2015). The topic that is synthesized illustrates concepts that motivate older adults to choose university-based retirement communities (UBRC): interests, life experiences, ideology, and to remain involved in education.

In her dissertation report, Meraz Lewis (2011) noted that the motivation for older adults to choose UBRCs stems from linked interests, life experiences, ideology, and values of further education. Residents of UBRC have the desire to be surrounded by like-minded individuals who have similar educational and career trajectories and would like to stay active, involved, and educated (Meraz Lewis, 2011; Morgenroth & Hanley, 2015). UBRCs also provide older adults opportunities to remain involved and engaged in their community, in which their community, environment, and culture are incorporated into authentic, meaningful experiences. The proximity of university or college campuses also encourages older adults to feel and be socially connected, in contrast to other living arrangements, which may present social and spatial isolation concerns (Morgenroth & Hanley, 2015).

Conclusion

Through this literature, it has been made evident that acquiring the knowledge of adequately writing a synthesis can significantly help students compose a sound literature review and more critically, a solidly constructed dissertation. It is imperative to walk away with the understanding of the necessary steps that one must take to create such a masterpiece and recognize the difference between a summary and a synthesis. As previously stated, synthesizing is not by any means a simple task; however, with practice, persistence, and dedication, one can master this technique of writing. One must not forget that there are a plethora of tools and resources that students have access to improve in this domain, such as a university's writing lab, where students are given guidance by those who are experts in this field. Furthermore, there is an abundance of websites that offer examples and techniques of perfecting the ability to synthesize. Last, but not least, one's greatest resource as a student is their professor.

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