

Reading in Colors: Highlighting for Active Reading

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Undergraduate students of religious studies face a constellation of struggles associated with their course readings. Students are asked to read and appreciate texts from a variety of disciplines, genres, cultures and periods. They are introduced to new and technical terms, expected to understand and apply theoretical models, and asked to compare unfamiliar traditions and cultures. Highlighting is a valuable study technique that can be modified to better serve students faced with this complex material.

Highlighting and underlining appear to be the study techniques most frequently used by college and university students (Anderson and Armbruster 1984, Brennan, Winograd, Bridge, and Hiebert 1986). A number of studies have investigated the usefulness of these techniques, and several theoretical explanations of their effectiveness have been proposed. In this paper, we review this literature and suggest that highlighting with multiple colors and symbols offers several advantages to traditional monochrome highlighting. This is especially so for religious studies which draws on a wide variety of interdisciplinary sources, methods, and theoretical perspectives.

We have all experienced the joy of finding a desired and precious second-hand volume on a crowded bookstore shelf, and the disappointment of opening it to find almost every line (in the first chapter, at least) saturated with sulphur yellow or lime green highlighter dye. The initial visual shock is often replaced by a question: "Why did just *these* passages become victims of the neon flood?" Bookshop browsing suggests that the highlighter pen often settles on an apparently random mix of the trivial and the significant. This observation raises an important question: how can students learn to highlight using criteria appropriate to a given course or discipline?

Highlighting in color (or any other technique that prompts the reader to differentiate textual passages) offers several advantages when compared to traditional monochrome highlighting. It helps students to specify types of text and information, facilitating retention and review. It allows them to practice using discipline-specific categories and concepts as they select what to emphasize. And it can prompt greater awareness of their personal responses as they relate actively to texts. As a result, this technique can directly embody some of the requirements or learning outcomes of a course, whether these include identifying ideas, themes or issues, learning types of information, applying theoretical concepts and descriptive typologies, or paying attention to personal dimensions of response. The point is that effective reading involves making differential judgments about texts. Some words or passages are more important, more striking or more relevant than others are, depending on the

goals and expectations that one brings to the text. Highlighting in color can be used to guide students in making these judgments.

Traditional Highlighting as a Study Technique

Several studies have investigated the value of highlighting and underlining as study techniques, with ambivalent results. In general it appears that highlighting “plays a useful if limited role in studying”: it helps students to distinguish between levels of importance in text and to remember main ideas (Johnson 1988, 32). The use of properly highlighted text aids recall (Nist and Hogrebe 1987).

Highlighting must be used with discrimination to be effective. There is little evidence that the use of highlighting, *as generally practiced by students*, is correlated with improved grades. One study found that “Students were more likely to answer a question correctly if they had highlighted the relevant word or phrase than if they had not”; however, this positive effect on recall is offset where readers have difficulty choosing which terms or passages are significant in the first place (Peterson 1992, 53-4). Another study found that noting text had little effect on recall; it suggested that the highlighting is not effective when material is read with a minimal degree of processing (Wade and Trathen 1989, 46). A study of 66 undergraduates at an American university found that 83% underlined on first reading and that a majority underlined over 20% of the selected text (Peterson 1992). This lack of discrimination appears to blunt an otherwise effective learning tool. Given actual student practices of highlighting, another study found that “the only safe conclusion we can draw is that underlining is not detrimental” (Nist and Hogrebe 1987, 13).

Different explanations are offered for the alleged positive effects of highlighting. Levels of processing theory suggests that information processed at deeper levels is remembered more effectively (Craik and Tulving 1975). This perspective suggests that highlighting will be effective only if students use it to actively engage the text, to ask questions regarding the relative significance of different elements of the text. On this view, if highlighting is used only as a tool to help improve concentration, it will not improve recall (Nist and Hogrebe 1987, 13).

A second theoretical explanation for the effectiveness of highlighting is the von Restorff effect: the fact that items set apart from a homogenous background are recalled more effectively (Wallace 1965). There is some experimental support for the von Restorff effect in the case of highlighting (Nist and Hogrebe 1987). Students who highlight a given text themselves do not perform better than those who receive pre-highlighted texts; these results suggest that “what goes on at output, the studying and rehearsal, is perhaps more important than the act of underlining itself” (Nist and Hogrebe 1987, 24).

This finding points to a potential problem: using books that have been previously highlighted in an inappropriate manner results in lower reading comprehension (Silvers and Kreiner 1997). As a result, students using previously highlighted books might profit from using a different colored marker to distinguish the results of their own reading (Silvers and Kreiner 1997, 222).

To sum up, highlighting and underlining improve recall and aid in review if, and only if, the initial process of differentiating terms and passages is done effectively. Training can help with this selection process. In the remainder of this paper, we suggest that highlighting in colors helps to focus the text selection process, providing a better tool for reading and reviewing.

Highlighting in Colors

One way of addressing the limitations of highlighting would be to abandon the technique. On this view, paradoxically, highlighting obscures key points: “Underlining too much hinders your ability to separate major from minor points when reviewing” (McCarthy, Rasool and Banks 1996, 201). A recent study-skills text urges learners to

. . . toss aside those highlighters in favor of a dependable pen and some paper. Learning from a text is not a passive process that involves reading and highlighting important ideas. As you read, use a marking system to distinguish topics, subtopics, common categories, and details. (Kiewra and DuBois 1998, 16)

This critique accepts that highlighting is not an effective way to differentiate text.

These disadvantages of traditional highlighting are a function of its monochrome simplicity. It does not encourage active reading. Students use a single color to select text that they feel is important. This is too simple to be effective. Selecting text using two categories, 'important' and 'unimportant,' does not lead the reader to question the specific function or value of different portions of a text. Monochrome highlighting is unable to distinguish distinct themes or types of information, definitions and applications of concepts, logical structure, interplay between theory and data, dimensions of personal response, etc. As a result, a person reviewing the highlighted text has little sense of why a specific word, phrase or passage is important. This lack of detail necessitates a further process of rereading.

The solution is to highlight more effectively. If the problem with highlighting is a failure to make discriminating judgments, then the solution is not to abandon the technique but to refine it. A more effective means of highlighting would prompt a more complex engagement with the text.

To function more effectively as a study technique, highlighting should challenge students to focus on texts in a more structured manner, asking questions about *how* a given point is significant. This can be achieved by teaching students to use traditional highlighting techniques more effectively, an approach that has been shown to help students improve test performance (Nist and Simpson 1988). Alternatively, this process of training students to read with discrimination can be made implicit in the technique of highlighting itself. The task of distinguishing types and levels of significance in text is made explicit when different colors and/or symbols are used to distinguish points according to categories of significance. The move from monochrome to multi-color

highlighting invokes a greater degree of attention and processing. This addresses a problem identified by studies of traditional highlighting: “lower ability college students do not have a problem identifying important information; however, they may have difficulty focusing adequate attention on that information, or processing it well enough to learn it” (Wade and Trathen 1989, 45).

The basic approach is to make criteria for selecting or processing text explicit and to provide ways to mark text according to these criteria. Teaching the technique involves giving students a range of possible answers to the question, “How is this bit of text important?” Different answers result in the choice of different colors for highlighting. Distinct colors can be used for terms and definitions, claims and counter-claims, prominent themes, theoretical frames, types of information or examples, dates and names, useful quotations, passages with specific sorts of impact on the reader, points relevant to an essay topic, etc. Even the use of two or three different colors forces the reader to ask *why* a given section is to be highlighted.

The point is to mark text differentially. Using a variety of colors is just one way of doing this. Marginal notation is another effective and complementary technique. Studies have noted the usefulness of marginal notations for learning (Nist and Hoglebe 1987; Nist and Simpson 1988; cf. Adler and van Doren 1972, 49). Marginal symbols are especially effective for drawing out formal and logical characteristics of the text: numbered series of points or examples; conceptual distinctions; key premises, claims, or assertions; summations or anticipations; the play of argument and counter-argument; strong or weak points in an argument or discussion, etc.

There are, of course, disadvantages to be weighed against the advantages of this technique: it is more time consuming, given the active reading process that it invokes; and, as with any marking of books, it reduces the resale value of texts.

To sum up, reading in colors offers several advantages over traditional monochrome techniques. It turns highlighting into a more active process. In order to choose a color, the reader must ask how and why a given term or point is important. This makes for more effective reading and review, and it answers criticisms that highlighting is an overly superficial study technique.

Reading in Colors for Religious Studies

Multi-color highlighting offers many advantages for students of religious studies. It is a flexible technique for coding complex material, and this is very useful in a diverse and cross-disciplinary field. As religious studies instructors, we ask our students to read a wide variety of texts: primary and secondary, theoretical and practical, fact and fiction, from sociology to theology, across disciplines and traditions. We expect them to become conversant with foreign terms, subtle concepts, nuanced distinctions, and complex theoretical models. We ask them to follow logical arguments, to distinguish factual and normative claims, to develop chronologies and typologies, and to appreciate detailed ethnographic descriptions. It is easy for readers of any level to get confused in

this kaleidoscope of ideas. Any technique that helps organize complex material during reading and review is a potentially valuable ally for teaching and learning.

We shouldn't expect that students know what is worth highlighting. Over sixty years ago, Mortimer Adler and Charles van Doren argued that "marking a book intelligently and fruitfully" is central to active reading (1972, 49). Yet, to highlight fruitfully, readers must first learn to select passages that are relevant to specific goals. Effective highlighting presupposes the ability to select out key terms or passages. This presupposes an acquaintance with selection criteria specific to a given course or discipline. But students are often using highlighting in an attempt to learn those very criteria (the terms, topics, issues, themes, approaches, etc. that are central to a specific course or discipline). How can highlighting be a learning technique if it presupposes so much learning itself?

Using the technique in the classroom requires making explicit what it is that students are expected to look for when they read. The first step is to identify the types of ideas, terms, concepts, etc. that are important. This is basic pedagogy. Identifying the types of knowledge (facts, concepts, models) and skills (processes, strategies, methods) that students are expected to acquire is a basic element of course design, and so of curriculum-based assessment (Wiggins and McTighe 1998, 9).

At a deeper level, by presenting students with a schema for what they should look for as they read, instructors can draw attention to the structure of religious studies as a discipline. The pedagogical importance of clearly setting out basic principles of a discipline has long been emphasized:

The curriculum of a subject should be determined by the most fundamental understanding that can be achieved of the underlying principles that give structure to a subject. . . . Teaching specific topics or skills without making clear their context in the broader fundamental structure of a field of knowledge is uneconomical. . . . (Bruner 1960, 6, 25)

Religious studies instructors often use discussions, handouts, slides and examples to model not only specific themes and topics but also fundamental distinctions between theory and data, fact and value, premise and conclusion, etc. Multi-color highlighting can become a visible manifestation of these basic principles and categories that students of religious studies are expected to acquire.

In the same way, this technique can be used to make course requirements and learning outcomes explicit. For example, one of the authors (Engler) addresses an institution-wide Critical Thinking outcome in a manner that involves the use of multi-color highlighting. This involves the following steps:

1. Providing students with a handout defining a number of key concepts (e.g., transcendence, profane, ritual, sacred space, orthodoxy, salvation, etc.).

2. Using these concepts consistently in lectures and discussions.
3. Asking students to use these concepts to distinguish terms and passages while reading course material and while analyzing images and videos.
4. Asking students to use these concepts in their written work.
5. Evaluating explicitly for appropriate use of these concepts.

Multi-color highlighting can also facilitate a more personal, dialogic, or dynamic relation to texts. Beyond working with a pre-set schema (e.g., Figure 1), the reader can generate highlighting categories for a specific text during the process of reading. In this way, reading in colors can be used to engage texts on their own terms, drawing out characteristic ideas, vocabulary, themes, modes of presentation, etc. Readers can also pay attention to their own responses, fine-tuning their highlighting technique as they distinguish more subtle dimensions of their engagement with the text. In practice, a combination of these two approaches is effective. A basic set of categories works well with a majority of texts from a given discipline, but it is a good idea to leave part of the palette free to capture uniquely significant aspects of a given text.

Practical Examples

To make this discussion more concrete, we conclude by offering some practical tips and examples. Regarding mechanical issues, the authors use a set of up to twelve pencil crayons and work with a system of marginal symbols. Pencil crayons offer several advantages over markers: they can be used to make concise marginal symbols and notations; they yield lighter or darker colors for additional shades of emphasis; they can be blended to emphasize a conjunction of themes or categories; and they rarely show through the page. It is important to choose colors that are distinguishable at a glance: a package of twenty-four pencil crayons yields at least a dozen useful hues.

The basic technique of marking text differentially can be applied to any course in any discipline. Readers need merely begin by acknowledging the possibility that different terms or passages might be important to them in different ways, given their specific goals in reading. This is true whether texts are seen as conveyors of information or as voices engaging the reader in a cycle of call and response, whether they are secondary sources or sacred scripture whether they are dryly factual or profoundly poetic, mathematical or metaphorical. The onus is on the instructor to make explicit for students the sorts of things they should look for in the course readings. Colors are simply a way of helping students to sort and keep track of these.

Colors can be used to lay bare the logical structure of a text. They can be used to mark sides of an argument, sequential claims, premises (explicit or implicit), examples, conclusions, deductive and inductive arguments, types of fallacies, etc. They can be used to mark levels of ideas, distinguishing between main and sub-points, principles and examples, authorial and cited claims, etc. A useful set of symbols for marking logical structure might include the following: ‘*’ for a key point; ‘V’ for a distinction; ‘>’ for a summation or conclusion; ‘>>’ for an anticipation or preview; ‘/’ for an argument or premise, ‘.’ for a counter-

argument. In texts that oppose arguments on different sides of an issue, colors can be used in conjunction with these sorts of marginal notations to note the structural characteristics of different arguments.

Colors can be used to mark themes or topics from specific disciplines or perspectives: e.g., sin, grace, authority, hierarchy, gender, transcendence, appeals to sensory evidence, or prominent metaphors. They can also be used to mark more general categories: e.g., ecclesiology, conflict theory, ideology, exchange, kinship, normative vs. descriptive claims, consequential vs. natural law arguments, or genre characteristics. The number and range of categories to watch for while reading can vary widely depending on the goals of an assignment or course. For religious studies, whose comparative method lends itself to the use of descriptive typologies, a useful set of categories for reading in colors is given in Table 1.

Table 1. Sample Schema for Reading Religious Studies Texts in Color

Highlighted Content	Color
Claim/Point of Author	Dark Blue
Main or Sub-topic	Light Blue
Theory (Clarification or Application)	Dark Purple
Conceptual Work (Term/Concept; Frame of Issue, Distinction, Rebuttal)	Light Purple
Definition of Term	Yellow
Primary Source/Sacred Scripture	Dark Brown
Secondary Source	Light Brown
Historical Event/Date	Dark Green
Sacred Time/Space, Ritual	Light Green
Tradition, Denomination, Group	Red
Social/Ethical Issues	Orange
Other Points of Interest	Tan

Conclusions

Reading in colors is a technique for fostering more active reading and more effective review. This can be especially useful for students in a multi-disciplinary field like religious studies, though any text can be read this way. Using a framework of this sort, readers are led to engage in dialogue with the texts that they read: identifying theories, models and examples; tracing the development of arguments; singling out new terms and concepts; categorizing information about relevant religious traditions; and paying attention to different ways that the text affects them. For these reasons, the technique can help to make some of the requirements or learning outcomes of a course explicit.

Reading in colors prompts readers to ask “*How* is this term or passage important?” As a result, it is a useful way to emphasize material relevant to specific examination questions, assignments, or essay topics. Multi-color highlighting and marginal notations allow the reader to return to a text and to reconstruct the arguments and contributions of the author. It helps to save time spent rereading, making it easy to scan for specific terms, passages or types of information--for example, when quickly reviewing material before a class.

Whether students choose to use multi-color highlighting or not, their exposure to a model of discipline-specific active reading will help them conceptualize the complex material that they are expected to master in a religious studies course. At the very least, it can help to stem the neon flood and to better channel the long hours spent reading by those who cultivate the field of religious studies.

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