



**Research Reading Guide of the Month**  
**MAY 2005**

Locke, L.F. (2005).

**Imagining the Reader-Friendly Research Journal, Part 1.**

It is springtime, and everyone should be permitted the luxury of a few dreams. Although my own often involve visions of long summer days spent in the high bench country of Montana, as Volume II of *UnlockResearch* winds to its conclusion, a very different image has come to visit. I have a dream that imagines a reader-friendly research journal – for short, an **RFJ**.

Whether that image takes the form of an idle daydream entertained as a means of avoiding work, or comes as an uninvited visitor to a restless night, my **RFJ** is a familiar specter. Over the years some of the details have settled into a prospectus that I can retrieve at will. That blueprint for what constitutes “reader-friendly” in a research journal is far from complete, but there is enough preliminary form to give me confidence that an **RFJ** actually could be constructed rather than just imagined.

Because this section of *Unlock* deals with the problems of reading research reports, I want to share my dream and, further, to invite you to join in the imagining of an **RFJ**. Lest you think this might be a frivolous journey into a fantasy land, let me cite some facts that should reassure you. Some journals already are experimenting with ways to ease the reader’s burden. The use of reader-friendly formats for presenting educational research have recently been urged in several national publications, and the board of editors for at least one physical education publication already is considering changes in the research report format that are designed to encourage and assist the journal’s readers.

The barriers created by unfriendly journals are genuine and widely recognized. The possibility of improvement seems real, and more reader-friendly research reports promise important benefits. If **RFJs** are not created now, then when? If they are not imagined by us, then by whom?

Assuredly, the new age for research journals will not begin tomorrow, in physical education or elsewhere, but change certainly is in the wind. And who is to say that the readers of a website for physical educators can’t make suggestions that could give direction to those changes?

I am certain that not everything we might want in our **RFJ** design would be acceptable to research scholars or would prove to be practical in the hard-headed business of publishing journals. And some suggestions might have to be discarded because they are not compatible with the political considerations that drive institutions of higher education. But who cares? If our reach does not exceed our grasp, then the best of our dreams are no more than dusty phantoms.

This May issue contains my suggestion for a small first step. If you will join with me, I am certain that we can identify many more elements that might be used to make a research journal truly reader-friendly, but more about that later. This is where we begin, and here are the necessary ground rules.

**Rule 1.** The design of an **RFJ** is not about manipulating researchers or what they choose to investigate. That is an entirely different topic. Being reader-friendly is about making it easier to identify studies that are of interest, putting them in a format that is inviting rather than daunting, encouraging writing strategies that make the task of reading more efficient, eliminating barriers to comprehension that are unnecessary to the production of a complete and accurate report, and, generally, about making research more accessible to more people. The purpose here is to improve the presentation of studies that are being done rather than to identify questions that you think ought to be addressed.

**Rule 2.** Creation of a reader-friendly journal must not be about diluting or dumbing down the essential elements of a sound report. The first function of a research publication is to communicate with other scholars, and the second function is to serve as a reliable archive for the progressive evolution of a coherent body of knowledge. Editorial policies that undercut those primary functions will discourage submissions and quickly lead to the demise of the journal. The whole story of the study must be presented including, when it is essential, all of the technical detail and appurtenant specialized language.

**Rule 3.** The third function of research reports in education is dissemination beyond the immediate community of investigators who are attending to the same questions. Those outside consumers include professional practitioners (teachers, coaches, and administrators), teacher educators, curriculum design specialists, graduate students, policy makers, textbook authors, and, most importantly, (though sometimes forgotten) other researchers engaged in adjacent fields of inquiry.

For the purpose of disseminating facts and ideas from research, any strategy that makes it easier for members of one group to read and understand makes it easier (and more attractive) for members of every group. Designed properly, an **RFJ** should thus have a widening readership, an increasing impact on scholarship and practice, and a growing rather than diminishing list of subscribers.

**Rule 4.** Publication of research journals is a profit-making enterprise, and that rule applies just as much to professional organizations such as the American Alliance (and, for example, to the Research Quarterly for Exercise and Sport) as it does to the commercial houses such as Sage or Human Kinetics. Accordingly, any effort to make a journal more reader-friendly must not conflict with the fact that the publisher has a proprietary interest in each research report. Titles, authors, and abstracts may be posted on publishers' websites or be available in searchable database systems, but those services are only ways of displaying the merchandise. Either you or an institution with which you are affiliated must pay for the right to read the full text of a report.

**Rule 5.** Reading research can be hard work and no **RFJ** should promise a rose garden. It is also true, however, that a great deal of the difficulty encountered when reading results from an accumulation of wholly unnecessary conventions, the failure to create supporting structures that meet the needs of research consumers, and an unhappy disposition among some scholars to regard impenetrable text as the hallmark of high order scientific competence and personal erudition. Not only have research reports evolved into the kind of text that looks dense and daunting, they read that way as well.

Put simply, none of those aversive qualities are necessary to have a good research journal. Unnecessary barriers to efficient reading and comprehension can be removed; an inviting page format can be substituted for what is unattractive and foreboding, and innovative changes can signal a journal that gives equal weight to sustaining the conversation among researchers, the archiving of knowledge, and the dissemination of information to those who can put it to good use.

With those ground rules in place, we have plenty of remaining room for thinking about how **RFJs** could be designed. A reasonable place to begin is the place where it all begins, with identification of reports that meet a particular need.

## Searching for the Golden Nugget

So, for example, you want some information about the relationship between teacher certification and student learning in elementary school physical education? There are 1,100 education journals that collectively published more than 20,000 research reports, reviews, and research-related articles in the past year. Searching through that mass of documents for reports that have some potential to bear on your question is not all that difficult. You just enter keywords (such as certification and physical education) into any of dozens of available search engines and you soon will have a list of citations.

Depending on the engine, your skill with manipulating keyword combinations, and the parameters you set (inclusive dates, journal type, etc.), you might have as many as 20 or 30 possibilities. With limited time to expend on the task, how do you decide which report(s) to track down, retrieve, and consume? Titles give some clue and usually allow exclusion of a few items for which your keywords obviously malfunctioned. But you still may have several dozen candidates. As researchers are not always adept at composing titles that reflect exactly the most important elements in their studies, it is risky to make much more use of titles.

If there are abstracts, you certainly can read them and begin to further narrow the field. Abstracts are written by either authors or editorial staff (mostly the former) and in many cases are subject to a word count limit. The standard for journals that use the format of the American Psychological Association (APA) is 120 words. That standard of brevity does not allow much detail.

Further, editors typically do not exert any significant effort at the task of improving the clarity and thoroughness of abstracts, and authors are mostly left to sink or swim. Finally, researchers often are focused primarily on explicating study design and methodology and are not particularly engaged by the problem of helping consumers identify findings that have potential utility when applied to professional practice. Under the best of conditions, even with careful scrutiny of titles and abstracts, you are likely to be stuck with a substantial remainder.

In theory, your only recourse is to retrieve the full text of the original reports and skim through each in hope of finding the proverbial golden nugget. There are two problems with that strategy: money and time. Individual journal subscriptions are costly, and most of us are able to sustain only one or two. On line at publishers' websites, substantial fees are charged for access to full text. If your local library happens to subscribe, you may have access to full text through a database. However, specialized journals often are excluded, and smaller institutions can afford to support only very limited forms of such retrieval. You can always get a report if you can pay the going price, but few of us can.

If you do, finally, retrieve a set of reports, you can sit down and winnow through to separate the chaff from the good grain, but the notion of "skimming" often turns out to have been an illusion. I can testify here that I usually collect a dozen or so candidates for the Unlock research report of the month, and just skimming through them to decide which ones make the final cut takes longer than the entire process of writing the final annotation. For many of the monthly issues I end up tossing out most of the candidates (in research, the devil truly does reside in the details) and uttering the same malediction, "Surely there has to be a better way to do this!"

## The Reader-Friendly Structured Abstract

There is a better way, and it is called the structured abstract (SA), a device that has been used in medical journals for many years. An SA differs from the usual abstract in several ways: (1) it contains sections that include all of the critical elements required to size up the exact nature of a

report and its potential relevance to any topic; (2) it is standardized so that all abstracts appearing in a particular journal have the critical elements laid out in the same predictable manner and sequence; (3) it is longer than the typical word limit, running to about a page in length (50 lines of single spaced 10-point font); (4) it, nonetheless, is a concise summary statement which lies in the strategic middle ground between the title and the full text, being long enough to allow a quick and accurate appraisal of the content but short enough to not violate the publisher's proprietary interest in the intellectual content of the full text, and (5) where authors prepare the SA, they do so in a prescribed format, and their work is subject to full editorial review.

To see examples of SAs as used in modern research journals you can inspect those used in the *Journal of the American Medical Association*, or the *Annals of Internal Medicine*. SAs also are used in the federally funded MEDLINE database that is accessible and searchable by the public. Recent articles concerning use of the SA system in education can be found in:

Miech, E.J., Nave, B., & Mosteller, F. (2004). The 20,000 article problem. *Phi Delta Kappan*, 86, 396-400.

Mosteller, F., Nave, B., & Miech, E.J. (2004). Why we need a structured abstract in educational research. *Educational Researcher*, 33, 29-34.

The typical template for an SA includes the following sections, plus others that may be added as required by special circumstances.

**Background/Context:** Description of prior research on the subject and/or its intellectual or policy context.

**Purpose/Objective/Research Question/Focus of Study:** Description of what the research focused on and the significance of doing so.

**Setting:** Description of the context for the study.

**Population/Participants/Subjects:** Description of the participants: who (or what), how many, how selected, and other key features.

**Intervention/Program/Practice (if employed):** Description of what was done to or with participants.

**Research Design:** Description of the study format: e.g., qualitative case study, quasi-experiment, randomized field trial.

**Data Collection and Analysis:** Description of the data collected, method of collection, and procedures for analysis.

**Findings/Results:** Description of main findings.

**Conclusions/Recommendations:** Description of the author's conclusions (and recommendations, if any) about the findings relative to the purpose of the study and specification of how the findings support those conclusions.

The figure below presents a comparison of the actual abstract for the study selected as the May, 2005 Unlock "Research Report of the Month," and an SA for the same report. In reviewing this comparison you should remember that learning to use SAs does require a little practice, but once a journal's particular format becomes familiar, the time required to extract the needed information drops sharply. Your eye moves through the predictable order much more rapidly than is possible with the often idiosyncratic text of the usual abstract. After you read the two examples, you should be able to determine which one would have left you better able to decide whether to invest time in retrieving and reading the full text.

Harrison, J.M, Blakemore, C.L., Richards, R.P., Oliver, J., Wilkinson, & Fellingham, G. (2004) The effects of two instructional models – Tactical and Skill Teaching – on skill development and game play, knowledge, self-efficacy, and student perceptions in volleyball. *The Physical Educator*, 61, 186-199.

**Original APA-style abstract:**

This study evaluated the effects of Skill Teaching and Tactical approaches on skill development, game play, knowledge, and self-efficacy for 169 high- and low-skilled beginning volleyball students. Three instructors each taught one Tactical and one Skill Teaching class two days a week for 16 weeks. A random coefficients growth curve model revealed significant improvement on skills tests, knowledge, self-efficacy, contacts per serve in 6-on-6 games, the percentage of successful passes and sets, and the percentage of legal sets and serves for both groups. Skill Teaching students ended 6.5 points higher on serve self-efficacy. Low-skilled students improved more on the serve skills test, self-efficacy, and the percentage of legal sets and successful passes. High-skilled students improved more on the spike skills test and legal and successful spikes per serve. Neither model was superior.

**Structured Abstract:**

*Background:* The Tactical Teaching model for instruction begins each lesson with a problem presented by the game and then, using student problem-solving procedures, moves to the practice of a skill that constitutes a strategically appropriate response. In contrast, the Skill Teaching model begins lessons with a stress on acquisition of psychomotor skill through large numbers of ball contacts for all players and successful trials in game-like drills. Strategic concerns are introduced later through modified games. Previous efforts to compare the two methods for skill development, game performance, and affective outcomes have produced inconclusive results. The authors attribute some of this ambiguity to the use of skill teaching methods that often have been no more than relatively weak forms of traditional instruction, a problem addressed by the design of the Skill Teaching model used here.

*Purpose:* To determine the development of volleyball skills (set-up, passing, serving, spike), game play performance (number of successful, legal, and strategically appropriate hits during games), sense of self-efficacy, and knowledge of high- and low-ability students when taught volleyball by either the Skill Teaching or Tactical Teaching method.

*Setting:* Six intact, university, beginning volleyball classes (coeducational) meeting twice weekly for 16 weeks.

*Subjects:* On the basis of pretest scores 169 students were divided into high- (34 females and 77 males) and low-skilled (51 females and 7 males) sub-groups.

*Intervention:* Three veteran volleyball instructors each taught one randomly assigned class using the Skill Teaching method and one using the Tactical Teaching method. The instructors were trained in both methods, used standard lesson plans, met weekly with an investigator to resolve problems and address questions, and were monitored daily to insure fidelity of treatment method.

*Research Design:* Employed a quasi-experimental pretest/posttest no control group design with two treatments and multiple dependent variables.

*Data Collection:* **Skill:** Pretest, midterm test, and posttest employed standardized AAHPERD skill tests. **Game Play:** Full 6-on-6 games were videotaped on days 4, 14, 21-26 (a tournament) and the tapes were randomly assigned to two trained coders who rated every hit as successful (legal and tactically appropriate), legal (but not appropriate) or incorrect (none of the above). **Knowledge:** An objective knowledge test of rules, strategies, and techniques was administered on the 1st and 20th days. **Self-Efficacy:** Skill-related self-efficacy scales were administered in conjunction with the skill tests. **Attitude:** an instrument to assess students' attitudes toward volleyball, class instruction, and their personal improvement was administered as a posttest.

*Data Analysis:* Descriptive statistics were calculated for each measure. A random coefficients growth curve model was used to assess learning over time for high- and low-skilled students under each treatment condition. A group by gender MANOVA was used to analyze attitude data.

*Findings:* Both treatment groups produced significant improvements on all outcome measures. With minor exceptions, there were no significant differences in skill, game performance, self-efficacy or attitude between the two treatment groups. Low-skilled students in both groups learned at a faster rate than high-skilled students. Although there were some gender differences, test scores revealed pervasively positive attitudes toward volleyball and the class experience.

*Conclusions:* When a positive learning environment is created, lessons are carefully planned, instructors are well trained and supported, and all students receive a large number of practice trials in situations that help them be successful in game play -- neither method offers comprehensive superiority. Game performance measurements used here did not assess the adequacy of play away from the ball, a particularly important outcome for Tactical Teaching.

The SA here was designed to fit on a single page rather than to meet a specified word limit. I estimate that reading time for a person familiar with the SA format would lie between 3 and 5 minutes. Although there is a great deal of detail not included in the compressed text, it seems likely that the SA would be adequate to support a decision about whether or not to retrieve the original. Further, the content does not violate any of the ground rules (see above) established for creating reader-friendly text. Finally, a careful reading of the SA would equip most readers with a useful synopsis of how the study was conducted and what was concluded by the authors. That is a considerable achievement for a single page of text.

I propose to move on in the next issue of *Unlock* to consider changes that might serve to make the text of research reports appear less dense and daunting and to remove elements that can make reading an unpleasant experience. What changes in writing style, text format, and reader supports would make consumption of reports easier, improve comprehension, and decrease the time demanded (without violating any of our ground rules)? If you have some suggestions, I would be delighted to include them (with or without attribution as you may choose) in the next issue. Just use the e-mail address below and let me hear from you before September.

Comments on this guide will be welcomed at [lflocke@hotmail.com](mailto:lflocke@hotmail.com).

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