How can business educators optimally teach structured abstracts? One possibility for doing so is combining the preparation and evaluation of structured abstracts with the developing and refining of information and communication technology (ICT) proficiencies since all of the ICT proficiencies are incorporated in the abstracting process.

The purpose of this manuscript is to help business educators at the postsecondary level teach structured abstract preparation and evaluation while also enhancing ICT proficiencies. This manuscript provides background information, instructional methodology, and business educators’ implications related to using structured abstracts to develop and refine ICT proficiencies. It concludes with a brief summary statement and a list of references.

**Background Information**

The background information section is divided into subsections addressing the definition and history of structured abstracts, the advantages of structured abstracts, the disadvantages of structured abstracts, and the linkages between the ICT proficiencies and the instructional methodology.

**Definition and history.**

According to Mosteller, Nave, and Miech (2004), a structured abstract “is similar to a table or figure in that it has a predictable structure [and,] it compresses a great deal of information into a relatively small space” and “is self-sufficient insofar as it is complete and able to be read and understood independent of the main body of the article” (p. 31). First found in medical journals to ensure consistency of presentation of critical information between and among articles and journals (Blaszczynski & Scott, 2005), structured abstracts have spread to social science and educational journals and into the business world. In fact, structured abstracts have appeared in recent issues of The Delta Pi Epsilon Journal (e.g., see Cardon & Scott, 2007; Scott, Blaszczynski, Green, & Fagerheim, 2008; Scott, Green, Blaszczynski, & Rosewarne, 2007; Stapleton, 2007) in response to presentations at professional meetings (see Scott & Blaszczynski, 2005, 2006a) and an editorial in The Delta Pi Epsilon Journal (see McEwen, 2006). Effective January 1, 2009, The Delta Pi Epsilon Journal will require its authors to provide structured abstracts (D. J. Green, personal communication, November 22, 2008). Either structured or narrative abstracts are being required for all Education Resources Information Center (ERIC) submissions (ERIC, 2008).

Structured abstracts contain embedded headings—often italicized or bolded—that are relatively consistent while traditional abstracts do not contain embedded headings. These embedded headings function as structured supports since they help writers provide the correct abstract content. The structured supports also are “designed to improve students’ academic performance by teaching them how to acquire, manipulate, store, or retrieve knowledge” (McCoy & Rader, 2008, p. 4). The nature of the specific headings used within structured abstracts reflects the focus of the journal or information user and the type of research that is reported—quantitative and/or qualitative (Blaszczynski & Scott, 2005). For example, common headings (with some variation) found in structured abstracts in educational journals include the following: background/context, purpose/objectives/research questions/focus of study, setting, population / participants / subjects, intervention/programs/practices, research design, data collection and analysis, findings/results, and conclusions/recommendations (Mosteller et al., 2004). Figure 1 shows a structured abstract that was tailored for the needs of the readers of the Information Technology, Learning, and Performance Journal (Blaszczynski & Scott, 2003). Please note that while the headings in this structured abstract do not match exactly with those suggested by Mosteller et al. (2004), the headings
generally convey similar types of information adapted for a particular audience. (See Appendix 1)

Advantages.

Structured abstracts typically contain more information, have higher quality information, are easier to read, are easier to recall, and can be searched easier and more quickly for desired information because of the embedded headings than can traditional abstracts (Scott & Blaszczynski, 2005). Abstract writers can be assisted by the embedded headings, which serve as a template for abstract content (Mosteller et al., 2004). Structured abstracts also reduce reporting bias. Further, “structured abstracts give decision-makers and researchers a concise way to rapidly identify, locate, and evaluate . . . research” (ERIC, 2008, n.p.). Research shows that students are more receptive to structured abstracts rather than traditional abstracts because of better readability, information value, and usefulness in deciding whether to read the entire article (Scott & Blaszczynski, 2006a).

Disadvantages.

Structured abstracts tend to be somewhat longer and have more confusing layouts than traditional abstracts have (Scott & Blaszczynski, 2005). Hartley (2002) estimated that the typical structured abstract is 20% longer than the typical traditional abstract. Some people initially respond negatively to structured abstracts because they deviate from the familiar traditional abstract style. Occasionally manuscript reviewers with various journals who are only familiar with American Psychological Association (APA) abstract guidelines have been known to provide the authors of this manuscript with such feedback as “This abstract looks funny to me” and “What kind of an abstract is this?”

Overall, the evidence suggests that the merits of structured abstracts at least equal and probably exceed those of traditional abstracts. As a result, business educators should feel comfortable using the teaching and evaluating of structured abstracts while developing and refining ICT proficiencies since all proficiencies are incorporated into the process of creating and evaluating structured abstracts.

ICT proficiencies definition, history, and linkages. The importance of ICT literacy skills is increasingly recognized in today’s complex digital environment. “Because of the escalating complexity of this environment, individuals are faced with diverse, abundant information choices—in their academic studies, in the workplace, and in their personal lives” (ACRL, 2007). The Association of Colleges and Research Libraries (ACRL) has identified seven vital ICT literacy proficiencies (ACRL, 2007). They are define, access, evaluate, manage, integrate, create, and communicate (ETS, 2008). These survival proficiencies are widely recognized as being so important for success nowadays that the Educational Testing Service (ETS) has developed the iSkills standardized assessment instrument that measures the attainment level of people’s ICT literacy skills. Some colleges and universities have gone so far as to make the passing of such an assessment instrument a requirement for graduation at the baccalaureate level in an effort to ensure that all graduates possess these essential ICT literacy skills (S. Brasley, personal communication, February 29, 2008).

The instructional methodology briefly described in the following section of this manuscript incorporates the seven ICT proficiencies in multiple ways, one of which is highlighted here for each proficiency because of space constraints. For example, the define proficiency is developed through identifying the information needed. The access proficiency is developed through the comparing and contrasting of information contained in various structured abstracts. The manage proficiency is developed through the organizing of information in the format needed. The integrate proficiency is developed through the summarization of specific information from journal articles. The create proficiency is developed through the crafting of the structured abstract itself. The communicate proficiency is developed through the adapting of information for a specific purpose and audience using the most appropriate form (for additional information, see www.acrl.org/ala/acrl/acrlstandards/informationliteracycompetency.cfm).

Instructional Methodology

The instructional methodology section is divided into subsections addressing the suggested steps for preparing and evaluating structured abstracts and some student and instructor comments.

Suggested steps.

When teaching others about the preparation and evaluation of structured abstracts, it is important for the instructor to implement the sequential steps that are concisely described in the following paragraphs. The teacher should:
1. Remind students to compose the structured abstract after the underlying research report or article has been drafted. The abstract is always the last document section to be written although it appears at the beginning of the document.

2. Discuss the format of a structured abstract. A structured abstract will incorporate a series of format-enhanced—i.e., italicized, bolded, and/or differentiated font sizes and/or styles—embedded headings that are consistent for that particular dissemination outlet. The headings could range from as simple as Objectives(s), Methods, Results, and Conclusions to as complex as those detailed in step 4 (see McEwen, 2006). Each embedded heading in a structured abstract is followed by the relevant information that can be expressed concisely in either phrase or sentence form.

3. Show the students at least one example of a structured abstract such as the one found in Figure 1. Other examples can be found in issues of such journals as The Delta Pi Epsilon Journal, The Journal of the American Medical Association, Information Research: An International Electronic Journal, and Educational Researcher.

4. Provide students with an introduction to the responses to possible embedded headings that could be found in a structured abstract. For example, in response to the heading Problem, a writer would explain what prompted the investigation. The heading Research Question(s) would prompt a writer to identify the matter(s) that served as the focal point(s) for the investigation. Such a heading as Research Method would cause a writer to specify the type of research methodology that was employed, such as survey, interview, or some other type of research approach. A heading like Setting would encourage a writer to tell where the research was conducted, such as a comprehensive suburban high school or a small business in the service sector in a rural area in the Northwest. In response to a heading like Participants, a writer would describe who the research subjects or informants were. A heading such as Data Collection Procedures and Analysis would cause a writer to address how the study data were obtained and examined. Headings such as Findings would prompt a writer to describe what the research yielded in terms of facts or data. In response to a heading like Conclusions/Recommendations, a writer would tell what the data mean and what would be the related actions to be taken and/or research to be conducted. This step incorporates the define, manage, and communicate ICT proficiencies.

5. Provide students with a short research article without an abstract and ask them to create a structured abstract for the article in response to teacher-provided abstract headings. In this initial structured abstract writing experience, it is best for the teacher to provide a limited number of headings to embed into the structured abstract. The teacher should give appropriate written and/or oral feedback about each structured abstract that is created. A rubric similar to that found in Figure 2 may be useful for this purpose. The teacher should show a sample solution to students to stimulate discussion and concept refinement and assimilation. This step incorporates the define, access, manage, integrate, create, and communicate ICT proficiencies. (See Appendix 2)

6. Provide students with a short research article with a traditional abstract and ask them to create a structured abstract for the article. Students should use embedded headings of their choice on this assignment. Again, the teacher should provide students with relevant written and/or oral feedback about their structured abstracts. A rubric similar to that found in Figure 3 may be useful for this purpose. This step incorporates the define, access, manage, integrate, create, and communicate ICT proficiencies. (See Appendix 3)

Teachers who wish to show visual learners the differences between traditional and structured abstracts for the same research can use Figure 4. This step incorporates the define, access, evaluate, manage, integrate, create, and communicate ICT proficiencies. (See Appendix 4)

For advanced students and advanced courses only, provide students with an instructional activity requiring them to create one or more structured abstracts for an assigned research project. Students should select appropriate embedded headings. Figure 5 shows a structured abstract writing assignment related to the preparation of annotated references. This step incorporates the define, access, evaluate, manage, integrate, create, and communicate ICT proficiencies. (See Appendix 5)

A rubric similar to that found in Figure 6 may be useful for evaluating such an assignment. (See Appendix 6)

8. For advanced students and advanced courses only, provide students with an instructional activity that requires them to critically evaluate three instructor-provided structured abstracts, identify the most relevant one for the specific purpose designated by the instructor,
and justify that choice by writing multiple paragraphs and/or by delivering a 2-minute oral presentation that defends the selected structured abstract as the most relevant one. This instructional activity is essentially the complement of the instructional activity found in step 7. This step incorporates the define, access, evaluate, manage, integrate, create, and communicate ICT proficiencies.

Student and instructor comments. Overall, students who have used this methodology perceive structured abstracts quite positively. Student comments follow. For example, “Learning how to write a structured abstract will assist me greatly in preparing research papers for my other courses.” “The use of headings in structured abstracts makes abstract writing simpler and faster.” “I write structured abstracts at work since they are required by grant providing agencies. This instruction is very relevant” (Scott & Blaszczynski, 2006b).

Many instructors perceive teaching about structured abstracts positively. Instructor comments follow. For example, “Teaching structured abstracts produced better student research reports, particularly in terms of the literature reviews.” “Teaching about structured abstracts increases my students’ understanding of research concepts and contents. I will continue to teach about structured abstracts.” “Having structured abstracts facilitates conducting my own research. Structured abstracts need to be taught and utilized extensively. I wish every journal I use published structured abstracts because then research information from various studies would be directly comparable” (Scott & Blaszczynski, 2006b).

Business Educators’ Implications

Implications derived from the presented methodology involve training business educators, modifying curricula, and conducting additional research. Business communication teachers, research methodology teachers, and business educators who conduct research need to receive training about structured abstracts and effective teaching methodology. Such training could be conducted at professional meetings and in relevant graduate courses by knowledgeable business education authorities. Business educators responsible for curricula should incorporate the teaching of structured abstracts into their curricula. Business communication and research methodology curricula will require modification to incorporate updated content about structured abstracts. Business education researchers should conduct additional research related to structured abstracts. They should investigate the most effective methods for teaching structured abstracts while developing and refining ICT proficiencies. Such research should shed additional light on structured abstract/ICT proficiency linkages. These researchers should replicate existing related studies with refinements as may be appropriate within five years.

Summary

By explaining the purposes and the types of abstracts and by leading students step-by-step through the structured abstract thinking-writing processes, teachers can efficiently prepare their students to create and evaluate structured abstracts in a variety of circumstances with a modest amount of instructional time, developing and refining ICT proficiencies during the process.

References


