Invited Paper

Writing IS Teaching Cases: Guidelines for *JISE* Submission

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ABSTRACT

Over the past year, *JISE* began accepting Teaching Cases for publication. Many information systems (IS) academicians and professionals have valuable experiences that are ripe for translating into cases. Students and instructors would benefit from the communication of these experiences into realistic, well-written cases to promote active learning. To encourage case submissions, the purpose of this article is twofold: (1) to provide potential authors with helpful advice and suggestions for writing case manuscripts; and (2) to communicate *JISE* guidelines for Teaching Case submissions. This paper is designed to serve as a resource for writers who are interested in developing Teaching Cases for publication.

Keywords: Teaching Cases, Active Learning

1. INTRODUCTION

JISE published its first Teaching Case in a recent edition of the *Journal*, Vol 12(4). In the same issue, *JISE's* Editor, Professor Albert Harris, pointed out the importance of Teaching Cases to IS educators, and he stated that it is the intention of the *Journal* to publish more cases in the future (Harris 2002).

Writing Teaching Cases poses some unique challenges. In many ways, preparing case manuscripts is significantly different from writing research articles. Previously, the *Journal* has not issued any written guidelines for case submissions. Thus, the manuscripts that have been received to date have been significantly variable in terms of format, length, content, and other concerns. The purpose of this article is to assist IS academicians and professionals who are interested in writing cases for publication. This article provides guidance for case development, and it presents a recommended format for the submission of cases to *JISE*. This will hopefully improve the chances for prospective writers to get their cases published.

2. BACKGROUND

There are many good reasons why instructors are interested in using Teaching Cases in their courses.

Cases help to develop a number of skills that employers seek in IS graduates. Model IS curricula, such as the IS '97 Model Curriculum and the Curriculum Model of the Information Resources Management Association and the Data Administration Managers Association, recognize the importance of problem solving, communications, and interpersonal skills *(IRMA Curriculum Model; IS '97 Model Curriculum).* Studies of employers and educators about skills needed for IS jobs have also consistently found that problem solving, analytical, communications, and interpersonal skills are highly important (e.g., Richards et al. 1998; Jiang et al. 1994; Hingorani and Sankar 1995; Tang et al. 2000-2001; Cappel 2001-2002). For example, the Hingorani and Sankar (1995) study showed that problem solving was the highest rated IS skill by employers, while Cappel (2001-2002) found that the top rated "soft skills" by employers were the ability to learn, teamwork, problem solving and communications skills.

In terms of the classic taxonomy of Bloom (1956), there are six basic levels of cognitive skills: knowledge, comprehension, application, analysis, synthesis, and evaluation. Teaching cases primarily require students to utilize the higher-order skills in this hierarchy. Through discussion questions or other requirements, cases demand that students engage in activities such as: applying theories or concepts to situations, distinguishing relevant from irrelevant facts, evaluating actions, looking at problems from multiple vantage points, and developing alternatives and solutions. Thus, the use of cases promotes problem solving and analysis. Moreover, since cases are often utilized in a group setting, they provide an opportunity for students to develop teamwork, interpersonal and communications skills. Case utilization represents an "active" approach to learning which stresses "learning by doing"; this increases the motivation to learn in many students and can result in more effective learning than more passive approaches such as lecture (Bonwell and Eison 1991).

3. MOTIVATIONS TO WRITE A TEACHING CASE

There are a number of reasons why a person in the IS community may want to develop a Teaching Case for publication. First, an IS educator may discover there are no existing cases in the literature to accomplish some instructional purpose. This situation is analogous to what sometimes happens in software acquisition; where there are no packaged solutions available, a firm may decide to custom develop its own system.

For example, when one of the authors of this article wanted to use a written case for a group project in a systems analysis and design course, he found that many published cases were either too short or too long. End of chapter cases in textbooks are often very short (typically one or two paragraphs), and they are focused on a limited number of issues. In contrast, other published cases can exceed twenty pages and they present far more detail than is necessary for a one-semester group systems analysis and design project. It may be argued that cases of this nature are still "usable" for a systems development project, in that students can be expected to sift through all of the details presented to locate only what is essential to their project. However, the use of very long cases runs the risk that students may get overwhelmed with information, so some instructors favor somewhat shorter cases. In the end, one of the authors of this paper decided to write a case that was more focused and of moderate length. The author decided to make it available to other instructors by submitting it to *JISE*, where it was later published (Cappel 2002).

A second reason why an author may be motivated to write a Teaching Case is that a certain opportunity simply presents itself and it captures the author's imagination. A writer may be inspired to develop a case based on his/her professional experience, discussions with colleagues, IS professionals, or students, or even through following some "high profile" company examples in the media.

A writer's consulting engagements especially provide rich material for IS cases, since these experiences provide first hand knowledge of "real-life" situations to illustrate course concepts. When cases are written from personal experience, however, authors are cautioned to exercise objectivity and to consider confidentiality issues. It is more challenging for an author to write a case objectively if he/she was a primary actor in shaping the solution. In addition, the author should obtain the approval of an organization to publish a case via a client release form; this issue is covered in more detail in Naumes and Naumes (1999).

Alternatively, a case can be written about a real-life situation based primarily on published reports, particularly where an event has received substantial attention in the press. For example, a business ethics case could likely be written about the Enron-Arthur Andersen financial reporting scandal. The writer should keep in mind, however, that since this approach relies on published information that has been "filtered" by other writers, it is important to use as many corroborating sources as possible. These sources include articles with opposing points of view, publicly available company and financial information, company websites, or conducting interviews with company personnel to supplement written sources.

Another possibility is to create a fictional case that is realistic in nature but does not necessarily depict an actual event or organization. This type of case tends to require more creativity to conceptualize and communicate all the relevant facts of a situation. However, it can be done with the proper care and attention to detail. For example, when Cappel (2002) developed a systems analysis and design case about a fictional church, case facts were created based on an examination of secondary data sources and reflection from the author's personal experience. The author examined documents such as Sunday church bulletins, collection envelopes, member mailings, and end-of-year contribution statements. Packaged software products specific to churches were also reviewed to help to identify relevant systems development issues. To provide realism and a concrete context for problem solving, the case was written about a specific, fictional church. The details were developed to be as realistic as possible, and they could essentially apply to many different organizations of this type.

4. TEACHING CASE OPTIONS

While all types of Teaching Cases are designed to promote analysis and problem solving, they differ somewhat in terms of their focus and presentation. IS Teaching Cases might be classified into two basic types: "non project-based cases" and "project-based cases." A non project-based case is designed to facilitate class discussion in one or a limited number of class periods. This type of case typically involves a "question and answer" format. Questions are posed to elicit responses from individuals (or groups) working either inside or outside of class, and later these responses are discussed by the entire class.

A non project-based case may be descriptive or normative in nature, or a combination of both. A descriptive case focuses on presenting a description of past events or decisions. Readers are then expected to analyze issues such as: What went wrong? Why? What steps could have been taken to prevent these problems? What should have been done? In their analysis, readers may also be asked to apply certain models or theories to a case. For example, a case could be written about an information systems project success or failure. This type of case could be used to illustrate how certain forces lead to project success or failure. Thus, a descriptive case often involves "lessons learned" from past mistakes, or it presents a model of a successful change.

Other cases have more of a normative focus. Readers are asked what a decision maker *should* do in a certain situation, where the outcome of the decision is not presented in the case itself. Thus, a case of this nature has more of a future than a past orientation. The reader must develop and evaluate alternatives, and choose and defend the best course of action. For example, an IS Teaching Case could be developed about an ethical dilemma facing a certain manager. Opposing views about the problem could be expressed by different actors in the case, and students could be expected to sort out the situation, and apply an ethical decision-making theory to arrive at and defend their decisions. Other examples of IS normative cases might involve specific decisions about a company's IS strategies, infrastructure, or policies. A given case might also possess both descriptive and normative elements. That is, certain case questions can be posed about an organization's past actions on some issues, and what it *should* do about other issues.

In contrast, a project-based case, which might also be called a "systems solution case," requires a more extended and sustained effort. The solution to a case of this nature is significantly broader than what is commonly encompassed in a non project-based case. The "action items" to be addressed usually involve systems requirements as opposed to answering questions. A systems solution case typically entails creating diagrams, charts, models, documentation, screen prototypes, or an entire system. Project-based cases are particularly suited for IS courses such as networking, systems analysis and design, programming, and systems development. An example of a systems solution case is a systems analysis and design case published by Cappel (2002) in *JISE*.

5. CHARACTERISTICS OF A "GOOD" CASE

Ideally, Teaching Cases have certain qualities. The attributes of an effective IS case discussed below have been culled from various sources (Naumes and Naumes 1999; Chrisman 1994; Shreyer 2002; Kardos and Smith 2002) as well as from the authors' personal experience. The first five elements (identified with an * below) are essential to virtually any IS case. The remaining three elements, while not required, are highly desirable. Accordingly, a "good" IS case:

Addresses IS subject matter*. While this point sounds redundant and unnecessary, its importance should not be overlooked. Business functions today are more integrated than ever before. A certain case, for example, could contain significant elements of both marketing and information systems issues. If a case writer is targeting the case to an information systems publication, he/she must ask: is this case primarily about information systems? If the answer is "no," it is probably more appropriate to direct the submission to a publication in a field where it fits more closely. To test whether a case is IS-related, a writer should be able to

determine which specific IS course(s) the case would fit and for which topic(s) within those courses.

Has a clear sense of purpose*. Writing a case involves "storytelling." Just as a good story has a theme or message, so too should a case. To identify the purpose of a case, the writer should ask fundamental questions such as: What knowledge do I want students to gain from this case? What types of mental processes do I want students to use in solving the case? If a clear purpose cannot be identified, the case is likely pointless and not worth pursuing.

Provides realism*. It is important that a case feel "real," regardless of whether it is based on real or fictional circumstances. One way to accomplish realism is for the case to be about actual events. Another way is to use quotes. Quotes help to reveal different points of view between actors in a case, and they enable readers to visualize a situation and identify with the players involved. Tables or figures can also be included in the text of a case to enhance realism. They can be used, for example, to focus readers' attention on certain trends or issues.

Is of appropriate length*. Unfortunately, there is no "magic formula" to determine how long a case should be. A guiding principle is that a case should be of sufficient length for readers to perform the required analysis and address the issues raised. A case's length depends on its objectives. Complex cases with a relatively long set of objectives will tend to be longer than cases of a simpler nature that have only one or a few objectives. Writers must strike a balance between readers having too much or too little information. The use of specific details adds to the length to a case, but it also tends to enhance realism. The inclusion of both relevant and irrelevant details also promotes analytical skills by requiring students to distinguish what is important from what is not. However, if a case presents far more details beyond what is needed to accomplish its objectives, readers may be overwhelmed, or feel confused or frustrated.

Is objective in presentation and tone*. A case writer should strive to present the facts of a case and refrain from expressing opinions about it. Essentially, this means that the writer should function as a reporter in describing what happened. If a writer interjects his/her value judgments into a case, it biases readers and diminishes the amount of analysis and interpretation that students do themselves. Even the inclusion of a single word can reduce objectivity. For example, the sentence, "The Manager made an excellent choice given the situation," would likely have the effect of biasing many readers (Naumes and Naumes, 1999, p. 101).

Has a hook. A "hook" is a statement or short paragraph at the beginning of the case to grab readers' interest and attention. It defines the focus of the case. An example of a "hook" that has been used at the beginning of some Teaching Cases is for a manager to be presented with some sort of decision-making dilemma. After this quandary is introduced, subsequent paragraphs elaborate on it.

Addresses a timely topic. Just as in the submission of research articles, if a case involves a topic of interest and importance to readers, this is an advantage for the manuscript. Thus, while a case about solving the Year 2000 computer problem might have created interest in the late 1990s, it is unlikely to generate much excitement today (unless it is about "lessons learned" that are still applicable to today's systems projects).

Has been "pre-tested." As suggested earlier, case writing is an art. There are so many details involved in writing a typical case – what to include, what not to include, how to state facts, etc. – that few, if any case writers, get them all right the first time. In survey development, a common practice is to pre-test an instrument with experts prior to its widespread distribution. Case writers should employ a similar approach. At minimum, a case should be circulated for feedback to knowledgeable faculty and/or professionals for review prior to its use. Most cases need to be refined in several iterations before they are suitable for use. Even after cases are used for course projects, students may uncover new points about the case that the writer did not anticipate. As a result, the writer may determine that case revisions are in order.

6. RECOMMENDED FORMAT FOR SUBMITTING TEACHING CASE MANUSCRIPTS TO *JISE*

Cases submitted to *JISE* are expected to be similar to the submission guidelines for journal articles in terms of length and the general appearance of the manuscript. Thus, the actual case submission itself should be approximately 20 double-spaced typed pages, although in exceptional circumstances the Editor reserves the right to publish works longer than this, which make a major contribution to the field. In addition, the appearance of the paper including spacing, the use of case and font, and other formatting issues should follow the "Author Guide for Preparing Your JISE Paper," which is regularly published in the *Journal* and available online at *http://www.jise.appstate.edu*.

However, since effective Teaching Case manuscripts require the inclusion of certain unique elements not found in research articles, the following section is provided as a guide for submitting Teaching Cases to

JISE. Authors are encouraged to follow these guidelines for their case submissions unless circumstances prevent the inclusion of certain items. For example, if no references are used in the preparation of a case manuscript, the References section need not be included. In addition, the Epilogue section described below will not be applicable to many manuscripts. Because the purpose of Teaching Cases in *JISE* is their potential use in the classroom, it is suggested that presentation of the materials be in two distinct parts. The first part is the actual case study itself. The second part is the teaching notes. The teaching notes will be maintained by the *JISE* editor and will be made available to subscribers of the *Journal* upon request. Both the case and teaching note will undergo the peer review process together, so careful attention should be paid to both documents.

7.1 The Case

JISE will allow readers of the *Journal* to reproduce copies of the actual teaching cases for classroom use. With this in mind, the case itself should be written in a way that would allow potential instructors choosing to utilize the case in the classroom to take the issue of *JISE* to a copy shop or their office photocopier to make the copies necessary for use in the classroom. The suggested components of the case include:

Case Title. The case title should contain the name of the company that the case examines as well as an indication of the issue(s) addressed.

Abstract. The Abstract should capture the essence of the paper in 250 words or less. It should summarize the highlights or key points of the entire work, including the case study and teaching notes. Thus, the Abstract should be written after the completion of the paper to ensure it is inclusive of the paper's overall content.

Keywords. Immediately following the Abstract, two to six keywords should be specified. These are topics the work addresses in decreasing order of importance.

Case Summary. This section should be one or two short paragraphs in length and it summarizes the content of the case. This includes identifying the organization, setting, focus, the names of key individuals in the case, and the types of decisions to be made (if any). This section, if properly written, serves as a convenience to instructors. Since educators are often stressed with their teaching schedules and have a limited time to prepare cases, this section reminds instructors of the key aspects of the case so that they will not have to re-read the entire case prior to walking into the classroom to discuss it (Naumes and Naumes 1999).

Case Text. This is the case itself. For guidance on preparing the text of a case, see Section 5 of this article.

References. The format for References should follow the "Author Guide for Preparing Your JISE Paper."

Author Biography(ies). All authors of the work need to submit a brief biography and a picture in .JPG format.

7.2 Teaching Notes

As indicated earlier, the actual teaching notes will not be published in *JISE*. This will prevent students from going to the library and getting "the answers" as proposed by the authors. Instead the teaching notes will be available from the *JISE* editor.

Case Purpose/Objectives. This section should identify the objectives of the case. In specifying these, authors should consider what knowledge that students are expected to gain from the case or what skills they will develop in addressing the case. Some cases will have one or a few objectives while others will have more.

Methodology. In this section, the author should provide information concerning how the case was developed. What factors inspired the development of the case? Was it an outgrowth of the author's consulting experience? Was it developed through interviews with key personnel involved in case at a company? Is it based on published sources?

Teaching Suggestions. This section should provide specific suggestions to instructors for utilizing the case effectively. If the case is to be discussed in one or more class sessions, how much time should be allotted for it? What up-front work is required of students prior to class discussion? Should the case be discussed in small groups, by the entire class, or using some combination of approaches? For what types of classes would this case be appropriate (i.e. Systems Analysis & Design, Database, etc.)? At which level is the case appropriate – undergraduate and/or graduate. Also, if applicable, the writer should address when in the course the case should be used – at the beginning, middle, or end – for maximum effectiveness and what pre-requisite knowledge students should have prior to its use.

Ideally, a case has already been utilized in the classroom setting before it is submitted for publication. This being so, what lessons were learned from its administration? What worked and what didn't (based on the instructors' observation, course evaluation

comments, or student surveys used by the instructor to evaluate the case)? Are there aspects of the case that students had particular difficulty understanding? What might an instructor do to mitigate these problems?

Discussion Questions/Answers or Proposed Solutions. Along with the text of the case itself, this is probably the most important part of the case manuscript and it requires the most time to develop. The format for this section will vary based on the nature of the case. For non project-based cases, this section raises discussion questions about key aspects of the case. Each question is followed immediately by a suggested answer. Of course, since there is often not "one correct answer" to any question, instructors should be flexible in considering students' responses to the questions raised during class discussions. The questions/suggested answers section should be carefully developed. The writer should spend considerable time looking at the case from different perspectives, raising all the relevant issues, and providing a thorough discussion of possible answers. This discussion might also address common misunderstandings of students about the case, and features of the case that some insightful students will notice while others will overlook.

For project-based (systems solutions) cases, this portion of the manuscript will likely be addressed in several sections or sub-sections and it will include tables, charts, systems prototype screens, or diagrams. For example, for a systems analysis and design case, Cappel's (2002) proposed solution included data and process diagrams, a table listing of entities and attributes, and sample systems outputs.

Regardless of the type of case and the resulting format of this section, the common thread is that this portion of the manuscript should serve as a valuable resource to instructors. Case writers should not assume that certain solutions are obvious and therefore leave them out. The writer spends considerably more time developing the case than the instructor who uses it. Thus, the writer should convey all of his/her knowledge and experience about the case to the instructor, who may have limited time to prepare it. Making this section thoughtful, complete, and "user-friendly" is a big plus for any case manuscript.

Epiloque. This section is applicable to decision-making cases and it often does not pertain to other types of cases. If a case has a decision-making focus, students may ask, "What did the company actually do in this situation?" If the writer has knowledge of what really happened, this should be conveyed in this section. Addressing this satisfies students' curiosities and brings closure to the case.

Conclusions. This section should address or underscore the contributions of the case for enhancing information systems education.

8. DISCUSSION AND CONCLUSIONS

As evident from the preceding discussion, case writing is challenging. It demands the ability to both "write a good story" in terms of developing the text of a case and to craft appropriate supporting material (teaching notes) necessary for the case to be used effectively for instructional purposes. Teaching Case submissions to *JISE* undergo the same double-blind review process as research articles. For this reason, they will be recognized as a refereed publication at some institutions; however, at other universities, they may not.

This goal of this paper has been to assist writers in developing Teaching Case submissions for the *Journal*. We encourage prospective writers to share their experiences with other educators and students by providing realistic problem solving situations for students to gain valuable skills for the IS workplace.

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