THE COMPREHENSIVE ANNUAL FINANCIAL REPORT:
A GOVERNMENTAL ACCOUNTING STRUCTURED WIKI PROJECT

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A Comprehensive Annual Financial Report (CAFR) Wiki, when implemented carefully, offers a novel alternative to the traditional written paper or group presentation in the governmental accounting class. Using a wiki facilitates sharing information related to course concepts in real-time as the term progresses and results in a rich resource pool of examples for use in current and future classes. In addition to the home page, which was created using the Blackboard 9.0, six structured wiki pages were developed that addressed the following themes: Select a CAFR, Governmental Funds, Deferred Inflows and Deferred Outflows of Resources, Fiduciary Funds, the Reporting Entity; and Internal Balances, Transfers, and Reconciling Items. A compilation of recommendations from the literature is included, as well as illustrations of some of the CAFR Wiki pages, how they were structured, implementation issues, and tips for using the Blackboard wiki tool.

Introduction

An important objective for any accounting course is providing students with opportunities to connect theory to practice. Having students examine the Comprehensive Annual Financial Report (CAFR) for a state or local government is one way to accomplish this goal. A typical CAFR project assignment often takes the form of an individual or group report which might be modeled after the Government Finance Officers Association's guidelines for awarding the Certificate for Excellence in Financial Reporting to qualifying cities (Moncada, 1999). In addition, presentations might be required as a deliverable to the class. One disadvantage to the culminating, individual or group, written report approach is the concurrent comparison of findings as concepts are covered in class.

A Comprehensive Annual Financial Report (CAFR) Wiki, when implemented carefully, offers a novel alternative to the traditional written paper or group presentation. Furthermore, requiring wiki postings throughout the term, facilitates sharing information related to course concepts in real-time as the term progresses. This paper explains how a structured, table-based, wiki was created with the Blackboard 9.0 course management system to share information in a governmental and nonprofit accounting course. A compilation of recommendations from the literature for a successful wiki project is offered. In addition, illustrations of some of the CAFR Wiki pages are provided, along with how they were structured, as well as implementation issues and tips for using the Blackboard wiki tool. As a result, faculty will be able to determine whether they possess sufficient technical aptitude and the willingness to devote the time necessary to implement a similar project.

Background

Web 2.0 describes a collection of technologies that have had a significant impact on the way in which individuals use the Internet. Prior to the introduction of Web 2.0 technologies in the mid to late 1990s, the Internet consisted of plain, static, web pages, controlled by their creators; and these web pages could not be edited by users. Web 2.0 tools transformed the Internet into a dynamic medium for the development of purposeful communities, the expansion of knowledge creation, and the acceleration of idea sharing (Maloney, 2007). The primary characteristics of Web 2.0 technologies include user participation, dynamic content, web standards, as well as scalability and interaction. To this end, Web 2.0

tools have been used to 1) share photos and videos (Flickr and YouTube); 2) engage in social and professional networking (Facebook and LinkedIn); 3) create virtual worlds (Second Life and Farmville); 4) host self-publishing platforms (Writer's Digest and Self Published Author); 5) share personal diaries (Julie and Julia: 365 Days, 524 Recipes, 1 Tiny Apartment Kitchen); 6) write blogs (AICPA Insights and Accounting Coach); 7) accommodate online bulletin boards or discussion forums (Craigslist and WebMD); or 8) produce wikis (Diploedia and Flu Wiki), compilations of web pages, the content of which has been contributed by a community of individuals.

Wikis

Described as an interlinked, collaborative, collection of community-owned, hypertext, web pages, the content of a wiki can be created, read, edited, or deleted by any registered member of the community (Mindel and Verma, 2006). In its simplest form, a wiki is like a blank, limitless page or canvas of web space into which contributors can define and enhance both structure and content. Users have access to word processing features, such as bolding and italicizing text, creating lists, inserting images, uploading files, and creating hyperlinks to external sources. Wiki content viewed by users represents the work of the last person to edit the wiki site and includes the date and time it was archived. This tracking feature allows the wiki administrator to monitor user input, compare edits, and revert any page to an earlier version or its original source page. A wiki can be edited by members of the wiki community in unrestricted ways, which distinguishes this Web 2.0 tool from the others which focus on content sharing.

Although the first wiki, WikiWikiWeb, was developed in 1995 by Ward Cunningham as a resource and communication sharing system for software engineers (Mindel and Verma, 2006; Karasavvidis, 2010; Clinebell, et al., 2012), the potential for using wikis as a collaborative tool soared after the launch of Wikipedia in January of 2001. Soon wikis were used in other public (Wikitravel and Wikileaks) and professional contexts, such as the SAP Developer Network (Norchovech, 2011). Other business applications included project management, corporate training, and community building (Campbell and Ellingson, 2010). In terms of the accounting profession, from 2005 through 2013, Intuit hosted the Tax Almanac wiki, a free online resource for tax professionals. In January of 2010, the American Institute of Certified Public Accountants also dabbled with this tool, launching the, since discontinued, International Financial Reporting Standards to U.S. GAAP wiki (DeFelice, 2010).

Wikis in Education

Pedagogical discussions related to wikis seem to have emerged around 2005, with actual applications in educational settings beginning to be publicly chronicled around 2008 in blended learning formats (Daspit and D'Souza, 2012). Educators began to use wikis within the classroom in a number of different ways: as a simple webpage, for collaborative analysis, to share class notes, for project management, and to distribute course information and materials (Frydenberg, 2008; Parker and Chao, 2007; Richardson, 2009; Weyant and Gardner, 2011). Between 2005 and 2008, based on a 1% random sample drawn from 179,851wikis, hosted by PBWorks, 255 of the wikis were associated with K-12, United States, public school implementations (Reich, et al., 2012).

In higher education, by 2010, wikis had been used in teaching physical education, nursing, languages, and information systems (Davidson, 2010). In business schools, they were implemented in a variety of classes, including fundamentals of entrepreneurship, organizational behavior, and management information systems (Clinebell, et al., 2012), principles of marketing (Workman, 2008), and principles of management (Weyant and Gardner, 2011). In the accounting discipline, wikis were implemented in MBA managerial accounting (Campbell and Ellingston, 2010), postgraduate intermediate financial

accounting (Davidson, 2010), and an English for Taxation and Accountancy course in Germany (Ashford, 2013). In all cases, the wikis were implemented as group projects. To date, no reports of the use of wikis in the governmental and nonprofit accounting course appear to exist.

Lessons from the Literature

Several authors have shared lessons learned from their ventures incorporating wiki projects into their classes. Table 1 provides a compilation of the suggestions and impediments from the literature for faculty to consider for a successful implementation (Ashford, 2013; Campbell and Ellingson, 2010; Davidson, 2010; Karasavvidis, 2010; Mindel and Verma, 2006; Weyant and Gardner, 2011; Workman, 2008). A wiki project should be introduced early in the semester with user instructions and rules provided for adding and editing content. For example, having material either entered directly or copied and pasted into the wiki seems to be the preferred approach for compiling wiki content rather than uploading files. Open ended questions or cases that students find interesting seem to be more appropriate for this medium, than numerical problems that have one solution. Dividing the project into smaller, sequentially ordered, segments appears to facilitate grading. As a result, each page might introduce a new assignment associated with the overall theme of the wiki.

Table 1
Tips for Creating Wikis
1. Introduce the wiki assignment early in the semester. 2. Provide user instructions since not all students possess equal skills. 3. Establish and discuss rules for editing content. 4. Keep the wiki closed to course members. 5. Choose a project that students will find interesting. 6. Establish goals, roles, and milestones. 7. Consider using open-ended cases or questions rather than solutions to numerical problems. 8. Have content entered directly or copied and pasted to the wiki rather than uploading Word or Excel files. 9. Divide the project into smaller segments which are sequentially ordered, introducing a new page in the wiki for each assignment. 10. Mandate wiki contributions and be explicit about expectations. 11. Organize content to facilitate grading. 12. Consider the time and effort investments required of students. 13. Contemplate becoming a quasi-team member to provide feedback. 14. Be aware that competition among students may undermine collaboration. 15. Realize students are reluctant to edit the work of their peers.

Wikis implemented as group projects appear to be viewed positively by students (Clinebell, et al., 2012; Weyant and Gardner, 2011; Campbell and Ellingson, 2010; Workman, 2008). Stanton and Stanton (2013) reported approximately half of the students they surveyed viewed wikis as an effective way to enhance class learning. Since team members can participate from remote locations, wikis facilitated group collaboration as well as documented team member accountability (Mindel and Verma, 2006; Campbell and Ellingson, 2010; Davidson, 2010; Clinebell, et al., 2012; Kear, et al., 2014). In addition to being user friendly, students felt wikis helped them organize their learning (Weyant and Gardner, 2011). Plus, wikis appeared to enhance student engagement (Campbell and Ellingson, 2010).

The two most noted issues with wiki projects involved students' reluctance to edit the work of their peers and competition among students undermining collaboration (Clinebell, et al., 2012; Weyant and Gardner, 2011; Karasavvidis, 2010; Mindel and Verma, 2006). As a result, establishing goals, roles, and milestones, with explicit expectations, including rules for editing content, is critical.

The Structured Blackboard Wiki Project

The primary goal of the CAFR wiki project was to help students connect governmental accounting concepts to the world of professional practice by requiring every student to examine a different Comprehensive Annual Financial Report.   Instead of employing the CAFR project as a group wiki, this implementation required every student to provide responses on the same wiki pages based on analysis of the CAFR chosen. The theme of each Blackboard wiki page coincided with concepts covered throughout the governmental portion of the nonprofit accounting course. As a result, structured wiki pages were created with space dedicated within each page for every student's contribution.   This wiki format encouraged students to review everyone's posts and eliminated the issue raised concerning students' reluctance to edit contributions of their peers. In addition, each wiki page provided the instructor with a rich resource of examples to be referenced during class discussion.

The Blackboard 9.0, CAFR Wiki home page introduced the project and listed the titles of each wiki page as a linked table of contents (see Table 2). User instructions with screen shots were created to teach students how to access the wiki and add content. An in-class PowerPoint presentation also briefly walked students through the process. In addition, an online video lecture was recorded and posted in Blackboard. As a result, the recorded lecture could be used for review purposes or by students who missed class on the day the project was introduced.

TABLE 2
CAFR Wiki Project Home Page
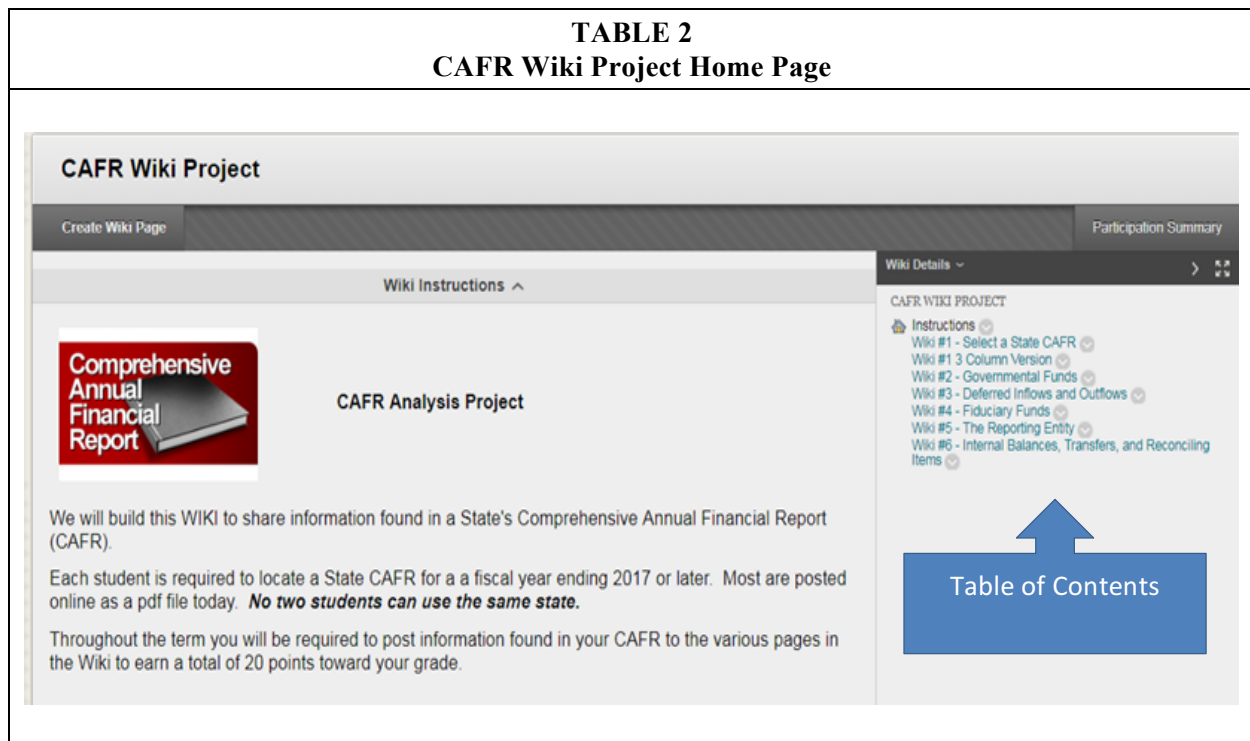
The structured wiki pages were developed by creating a multi-column/multi-row table on each page. Opening information on each wiki page provided instructions, and the first row of each table was

used to provide an example of the type of information students needed to locate in their CAFRs. Students' names were entered in alphabetical order in the first column of every table to facilitate grading. Contributions from students were limited to the row to which they were assigned within each page. Each additional column beyond the first column in the table was dedicated to some aspect of the theme of the page. Every page of the CAFR Wiki followed this format. Students were also directed to refrain from adding pages to the wiki as well as modifying the contributions of other students.

Table 3 illustrates the first wiki page, *Wiki #1 – Select a State*. State CAFRs were preferred, because they were more likely to include most of the fund types discussed in the course. Five additional wiki pages were created for the project. The themes of these pages were: 1) Governmental Funds, 2) Deferred Outflows and Inflows of Resources, 3) Fiduciary Funds, 4) the Reporting Entity, and 5) Internal Balances, Transfers, and Reconciling Items. All student entries required page references. As a result, the instructor could verify or review information when a response appeared to be incorrect.

Table 3 Select A State Wiki Page	
Locate your name in the list below and enter the name of the state you have chosen. *No two students may use the same state. (1 point)*	
Student Name	**List the name of the State and fiscal year end (i.e., June 30, 2017)**
Faculty name	State of Wisconsin, Year ended June 30, 2017 *(This CAFR will be used as an example for future Wiki pages)*
1.	
2.	
3.	
etc.	

The Governmental Funds and Deferred Outflows and Deferred Inflows pages, coincided with class discussions of the governmental funds and the accounting equation. The Governmental Funds wiki page (see Table 4) had students identify the major funds displayed on the balance sheet. In addition, students were required to locate the non-major special revenue funds, determine how many existed, and describe a few of them. The Deferred Outflows and Deferred Inflows wiki page referenced GASB Statements 63 and 65. It required students to examine the governmental funds balance sheet and *Note A, Summary of Significant Accounting Policies* to locate the discussion of deferred outflows and deferred inflows of resources provided. Students were to describe the nature of any of the transactions that occurred during the current fiscal year as a way to become familiar with these concepts.

The Fiduciary Funds wiki page had students describe the pension trust, investment trust, private purpose trust, and agency funds that existed for their states. The intent of this page was to help students become aware of the types and nature of fiduciary funds that occur. Using a State CAFR is particularly important for this fund category, because the Investment Trust Funds tend to appear only at this level. Similarly, locally reported private purpose trust funds are seldom seen. Given the CAFRs selected, with the exception of Alaska, Hawaii, and Washington, most states chosen had no more than one of these fund types omitted. Having real world exposure to fiduciary fund examples beyond those referenced in the textbook proved beneficial to students and their learning.

TABLE 4
Wiki # 2 – Governmental Funds
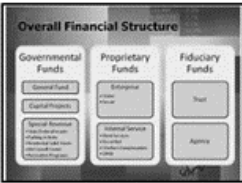
Answer the following questions:

1. How many major governmental funds does your state have? *(Locate the Balance Sheet for the Governmental Funds.)*

2. Besides the General Fund, provide the names of the major governmental funds and indicate the type of fund that it is. Include the page number of the CAFR where this information is found. *(If you have more than 4 major governmental funds, just list 3.)*

3. How many different types of non-major governmental funds does your state have? *(Locate the information in the Supplementary Information section of the CAFR).*

4. Name and describe three non-major special revenue funds. List the name of the fund in bold, italic font. Include the page number of the CAFR where this information can be found.

Example (4 points)

State & year end	No. Major Gov. Funds	Names of the major Gov. Funds (list at least 3, if possible)	No. of Non-Major Funds	Name and describe three non-major SRF's
Wisconsin (6/30/2015)	3	Transportation (SRF) Capital Improvement (CPF) *[Page 42]*	SRF (32) DSF (5) CPF (2) PF (5) *[pp. 163-165]*	*The Conservation Fund* - accounts for the management of the State's fish, wildlife, parks and other natural resources with funds provided by fishing and hunting licenses, recreational fees, and forestry taxes. *Police and Fire Protection Fund* - accounts for the distribution of fees collected by communication providers and retailers for distribution to counties and municipalities as shared revenue. *The Economic Development Fund* - accounts for economic development surcharges collected from Wisconsin businesses for the privilege of doing business in the state. *[page 163]*

Student Name	State & year end	No. of Major Gov. Funds	Names of 4 major Governmental Funds	No. of Non-Major Funds	Name and describe three non-major special revenue funds.

The Reporting Entity wiki page had students return to *Note 1A, Summary of Significant Accounting Policies* and describe the reporting entity, as well as the State's blended component units, discrete component units, related organizations, and joint ventures. Students were also required to explain why an entity listed qualified as a discrete component unit. Understanding the criteria that determines when an entity is a component unit is another concept students seem to struggle grasping.

The final wiki page was designed with government-wide level reporting concepts in mind. Handling the worksheet conversions when moving from the fund-level of financial reporting and the modified accrual basis of accounting to the government-wide level of reporting and the accrual basis of accounting are perhaps the most difficult concepts for students to grasp. Confusion seems to repeatedly exist in terms of distinguishing between the internal balances and transfers between the government-type and business-type activities on the Statement of Net Position and Statement of Activities. For the Internal Balances, Transfers and Reconciling Items wiki page, students first examined the government-wide Statement of Net Position to determine the internal balances reported on the balance sheet. Next students examined the Statement of Activities to determine the transfers reported on the operating statement. Finally, students described at least one reconciling item between the fund level and government-wide level balance sheets and one reconciling item between the fund level and government-wide level operating statements.

Implementation Issues and Resolution

Four noteworthy implementation issues existed. First, creating the structured CAFR Wiki using the Blackboard Wiki tool was not an intuitive task. The initial setup did require a considerable investment of time and ultimately basic knowledge of html coding. The primary problem involved the "insert/edit table" feature of Blackboard fixing the width of the table, but not the cells within the table. The size of each column kept changing, depending on the amount of text entered into a cell. As a result, the cell

properties for every cell in the table had to be individually set. For example, a four column table with 25 rows, would require 100 cell property configurations to be set.

One way to avoid this problem is to create a table that contains only one row with multiple columns. Cell padding, alignment, and border preferences can be set at this time. Cell padding determines the spacing between the cell's borders and the contents of the cell. Specifying the width of the table in pixels, prior to inserting the table, is critical.   Next, the width of every cell in the row must be configured by accessing its table cell properties. The sum of the widths of each cell in the row cannot exceed the width of the entire table. Using the "insert rows after" tool to add the desired number of rows to the table will duplicate the cell settings of the first row of cells in the table. Finally, typical Microsoft-like edit features can be used to add interest.

Initially, most of the wiki pages for this project were created by writing html code and reverse engineering the fix with Blackboard settings. Table 5 illustrates html code that will create a table approximately 7.25 inches wide containing one row with 3 columns. Some individuals might find it less troublesome to copy this code into the "HTML Code View" pop-up window of the wiki page, instead of using the Blackboard built-in, table and cell properties tools.   The width of the table is specified in pixels in the first line of code. Without becoming too technical, the three < td…> or "table data" lines of code anchor the width size of the three columns in the first row of the table. The widths specified in these lines of code need to sum to or be slightly less than the width of the table specified in line 1.   Width sizes merely need to be modified to change the size of the table and columns within it. To add another column for the table illustrated, merely add another <td…> html statement. For example, to convert this table to one with four columns of identical size, requires having four lines of code as follows: <td style="width: 200 px"> </td>. Update and return to "Edit Wiki Page View". Insert the desired number of rows for the blank table and the basic structure for the wiki page is complete.

Table 5 Basic Table HTML Coding (Table with One Row and Three Columns)
<table border="1" cellpadding="4" style="width: 800px;"> <tbody> <tr> <td style="width: 200 px;"> </td> <td style="width: 100 px;"> </td> <td style="width: 500 px;"> </td> </tr> </tbody> </table>

The second troublesome issue occurred when the Blackboard Utility, "Course Copy" was used to transfer content into the course for the next semester. No content beyond the title of the wiki copied to the new course. As a result, the html coding for each wiki page was separately copied and pasted into equivalently titled blank wiki pages that were created for the new course. With this approach, however, the information that prior students had contributed also rolled forward and then had to be manually deleted from each page. To solve this problem, blank templates for each wiki page were created in a Blackboard course development site. For future classes, the html coding was copied from the development site's wiki pages. Based on the number of students in the class, rows merely needed to be inserted or deleted.

The third issue surfaced while attempting to copy students' names from one wiki page to another. The "copy/paste" feature would not copy content from one table to another regardless the browser used (Internet Explorer, Chrome, Firefox); nor did it work using control key commands. As a result, each student's name had to be retyped by the instructor for every wiki page. One solution would be to sequentially number the rows within each table and assign to each student, the row number that corresponds to the student's alphabetical position in the class roster. Having students enter their names in the row to which they are assigned eliminates the need for the instructor to perform the data entry.

Finally, the first time the CAFR Wiki project was implemented, students were asked to select a Comprehensive Annual Financial Report for a city of considerable size. However, more often than not, several students frequently did not have some of the funds or concepts represented in their CAFRs. This situation lead to student confusion and frustration when they searched for nonexistent information. Once, State CAFR's were required this problem was significantly minimized.

Student Feedback

Students were informally surveyed to provide feedback as to the value of the project. All 31 students agreed or strongly agreed that the project helped them relate to concepts covered in the class. Similarly, 97% of the students agreed or strongly agreed that the project helped them connect governmental accounting concepts to the real world. Only, one individual had no opinion. Results were comparable when students were asked whether the project was valuable for enhancing their understanding of the nature and structure of the CAFR.

In addition, feedback was sought in terms of posts reviewed, group project preference, points earned, and project continuation. Post reviewing frequency is reported in Table 6. Preference for a group project was expressed by one fifth of the students. Students also agreed that the points assigned to the project were adequate. The points assigned were 4% of the course total. The specific point value for each wiki post was included with the instructions for each page. Finally, students not only, overwhelmingly felt the project should be continued, but they also felt it should be expanded to include more topics.

Table 6 How Frequently Students Reviewed Their Peers' Posts	
Frequency	Percentage (n=31)
Never	6.45
Once or twice	16.13
Only when I didn't understand the nature of the assignment	25.81
Three or four times	16.13
Always	35.48

Discussion and Conclusion

As indicated by Workman (2008), the greatest challenge in developing a wiki is time and technical expertise in terms of creating and organizing content as well as the time involved managing student contributions (grading). In terms of technical expertise, while the Blackboard table tools can be used to create the structured tables for the wiki pages, having some basic knowledge of html coding

proved beneficial. Until the resident tools of Blackboard's learning management system becomes more user friendly, this CAFR wiki project endeavor may appeal only to those faculty who enjoy tinkering with technology. However, once developed and deployed, the table templates, html table coding can be copied and pasted from wiki page to wiki page.

In terms of grading, given the nature of the CAFR wiki project, evaluating student contributions was no more time consuming than grading any other homework assignment, and much less time consuming than grading a CAFR analysis type of research paper. Contributions were graded once the wiki page due date expired. From the Blackboard gradebook, each student's contributions can be reviewed and graded page by page. With each contribution time and date stamped, only the last contribution to the page need be graded. Furthermore, having the name of each student assigned alphabetically to a specific location on the wiki page facilitated finding a particular student's post. In addition, instructor comments were included in the gradebook to inform students when their postings were successfully completed. Few instances occurred where incorrect information was posted. However, when it did occur, constructive feedback was provided, along with a request for corrections.   Positive grading was used and students were awarded points once contributions were finally judged adequate.

As for adaptations of the CAFR Wiki project, it could easily be implemented using a group format by assigning more than one student to each row of the table on the wiki pages. Rather than merely reviewing information, students could be required to analyze the Comprehensive Annual Financial Report of a local government by computing relevant performance ratios and reflecting on results.   For example, students could be asked to report and comment on budget solvency and operating results or debt burden and long-term financial flexibility indicators.

In conclusion, the Wiki Web 2.0 tool offers governmental and nonprofit accounting instructors a novel approach for implementing a Comprehensive Annual Financial Report project in lieu of having students write a lengthy research paper. It provides a means for sharing findings in real-time as concepts are covered in class and results in a rich resource pool of examples for use in future classes. As is the case with any technological innovation applied to education, individual faculty will need to weigh the pedagogical benefits of their development time costs in order to determine whether the endeavor is ultimately worthwhile.

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