

“Game of Business”: a Game for Use in Introductory Accounting

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Abstract

The role of introductory accounting classes is to introduce the vocabulary, methodology, and application of an accounting system to students who have little or no background in business. This paper presents a hands-on tool for providing review and reinforcement of the accounting cycle. Based loosely on the Hasbro Game of Life™, the tool provides an opportunity to practice transaction analysis and review the accounting cycle. At the same time, the game can be used to introduce students to the [Annual Statement Studies](#) online resource. This resource can be used to build a pro forma balance sheet with which to start the game. Finally the game can be used to introduce and encourage cooperative learning strategies.

Background

The role of introductory accounting classes is to introduce the vocabulary, methodology, and application of an accounting system to students who have little or no background in business. Fulfilling this task has changed overtime. Gregoryk and Eighmy (2009), Robinson (2006, 2007), Eisner (2004), Arhin and Johnson-Mallard (2003), and Young (2002) note that changes in learning styles have made the traditional class format, based on lectures and problem sets, inadequate in meeting the learning needs of current students. Whether as a result of years of watching television or playing computer games, these researchers find that there is an increasing need among contemporary students for instant gratification and entertainment. Additionally, such students are increasingly visual and kinetic learners. In response to students' increasing desire for hands-on activities, faculty in numerous disciplines have added simulations and other hands-on activities to the mix of classroom strategies (Lippincott and Pergola 2009, Gast and Leathan 2005, Sarason and Banbery 2004).

This change is evident at academic conferences where there are increasing numbers of presentations and poster sessions on adapting various types of interactive games to the higher education setting. Recent games and simulations have included creating assembly lines to teach product costing and production control (Lippincott and Pergola 2009), using television game shows like *Jeopardy* (Revere 2004) and *Who Wants to be a Millionaire* (Sarason and Banbery 2004) to review concepts, and structuring class sessions in a talk show format to develop communication skills (Eisner 2004).

This paper presents a hands-on tool appropriate for an introductory accounting class. Structured in a game format, this tool has appeal to the current generation's preferred learning style. The main objective of this tool is to enhance students' ability to complete the accounting cycle by providing an opportunity to practice transaction analysis, evaluate and record adjustments, and create summary financial statements. As such, the tool provides an opportunity to review these parts of the accounting cycle.

The tool, based loosely on Hasbro's Game of Life™, has two additional benefits. First, it provides an opportunity to expose students to the [Annual Statement Studies](#) electronic data base. This database provides industry-level

information including the typical distribution of funds on a balance sheet and income statement. Students use the information in the database to set up pro forma balance sheets with which to start the game. Second, the simulation highlights the benefits of cooperative learning as students work in groups and audit each other's work. The paper proceeds as follows: Section 1 reviews the literature on active learning. Section 2 describes the objectives and rules of the game and provides examples of game materials and student work. Section 3 describes opportunities to use the game as part of student or program level assessment. Section 4 concludes and offers possible extensions and modifications of the game.

Section 1: Literature Review

Research has shown that using various simulations contributes to student learning in a variety of ways. DeCoster and Prater (1973) outline three advantages of games and simulations. First, games often engender a positive attitude toward learning and encourage engagement in the learning process. Second, active involvement stimulates learning. And third, games provide opportunities to integrate and apply learning. Kechnal (1989) points out that simulations can add an element of business reality to the classroom and can reduce issues of slacking induced by the use of standard problem sets. Hoffgan (2005) and Murphy (2005) point out that games and simulations turn students into active participants rather than passive consumers of information. They find that this type of active engagement positively impacts learning and retention. Fowler (2006) compares the use of traditional pedagogy to the use of simulations. He finds that students who are actively engaged in learning through the use of a simulation are better at the application of knowledge level on Bloom's taxonomy than students who complete a course using traditional pedagogy. Ashwin (2005), Kechnal (1989), and Hoffgan (2005) suggest that, beyond reinforcing and extending content coverage, games provide opportunities to develop team work, collaboration, and interpersonal social skills.

More recently, research has highlighted changes in student learning styles. Robinson (2007), Eisner (2004), and Arhin and Johnson-Mallard (2003), among others, have suggested that changes in learning styles make the use of games and simulations even more important. They further suggest that where past generations of students may have poured over text books, the current generation, groomed on television and computers, is more accustomed to other modes of education. Lippicott and Pergola (2009) and Murphy (2005) suggest that GenY students are more visual than verbal learners. Additionally these researchers find a strong preference toward active engagement and innovation in the learning process both from students and from educational oversight commissions such as the Accounting Education Change Commission. According to Tanner and Linquist (1998), games and simulation can fulfill this need for active engagement. They find that games promote active engagement in the learning process while providing opportunities for practice and application without rote memorization. Lippicott and Pergola (2009) call this type of pedagogy "edutainment" as games and simulations capitalize on the entertainment value of the activity to support academic learning.

Board games and other types of simulations can serve another role. They can be used to demonstrate and promote cooperative learning strategies (Tanner and Linquist 1998). Cooperative learning requires students to work together to achieve a common goal. Group members are responsible not only for their own success, but for the success of their teammates. Thereby, students have shared responsibility for learning. By using cooperative learning activities early in an undergraduate's education, the activities can also be used to demonstrate the benefits of teamwork and set the stage for future group work. For example, Tanner and Linquist (1998) use Monopoly in an introductory accounting course as the basis for a tournament that reinforces cooperative learning. They find that their tournament is an effective tool for introducing and reinforcing team-based reasoning and problem-solving skills without sacrificing academic rigor. Ballantine and McCourt Larres (2007) provide some useful guidelines in structuring cooperative learning activities so that the activities go beyond simple group work. They specifically outline the key role faculty play in group formation, management, and assessment. Specifically, they suggest that faculty should structure groups in order to maximize the benefits of cooperative learning rather than allowing students to self-select. Faculty should also play a role in setting group expectations and standards for assessment. These steps should be used to support the end goal of ensuring the success of all group members.

The Game of Business was developed within this context. The Game of Business is a modification of Hasbro's "The Game of Life™," a game popular with current students from their youth. This tool has three key benefits. First, like other simulations, it reinforces core accounting concepts and methodology by requiring students to evaluate economic events, record transactions, determine the trial balance, record adjusting entries, and create financial statements. Second, the design of the game materials, with transactions cards labeled as "financing," "investing," or "operating" activity, reinforces the link between individual transactions and the underlying economic activity. Finally, elements of cooperative learning can be introduced and reinforced through group selection, game directions, and assessment. A description of the game follows below.

Section 2: The Game of Business

Purpose

The purpose of this learning tool is threefold: 1) to review the accounting cycle, 2) to introduce students to the Annual Statement Studies data base of industry information, and 3) to reinforce the idea of cooperative competition or cooperative learning. Through the exercise, each group member acts as her own company, setting up a unique accounting system, tracking transactions, recording adjustments, and creating unique financial statements in accordance with GAAP. In setting up their accounting system, students make use of information in the Annual Statement Studies electronic data base. In addition to providing an opportunity to review the accounting cycle, the game introduces and reinforces cooperative-competition, or co-opetition (Brandenburger and Nalebuff 1996), as a learning strategy. In co-opetition students are responsible not only for their own learning and success, but also for their "opponent's" success. In this case, group members serve as external auditors ensuring that the transactions are correctly recorded by all members of their group. Despite the recognized benefits of study groups, students, especially freshman and sophomore students who are the primary audience for Introductory Accounting courses, often feel that they need to master material on their own. To encourage co-opetition in the game, prizes can be awarded to members of any group in which all group members complete the accounting cycle in accordance with GAAP (accounts properly categorized, transactions and adjustments properly recorded, balance sheet balances, etc.) thus rewarding each individual for group performance.

Overview

The Game of Business works well as a review for the midterm exam in most introductory accounting courses. In using the game, therefore, I schedule play time into one 80 minute class period about a week before the midterm so that I can grade the student work and return it to students in time for them to use their work when studying for the midterm exam. As a learning tool, The Game of Business is set up as a board game much like Hasbro's Monopoly™ or Game of Life™. The components of the game include a board, five sets of cards, and a die or spinner (see Appendix B). One set of cards is for various types of businesses, three sets of cards include typical economic events organized by the underlying type of business activity: Operating, Investing, or Financing. The final set of cards includes adjusting entries.

To start the simulation, the class is divided into groups of 3-4 students each. Each student will create an accounting system for a company, track transactions, record adjustments, and create financial statements for her company. Other group members will act as consultants and external auditors to insure that every accounting system is constructed according to generally accepted accounting principles. Each student will complete 10 transactions and 5 adjustments before creating financial statements. Students will create an income statement, a statement of retained earnings, a balance sheet and a cash flow statement using the direct method. At the end of the exercise, students will submit their accounting records along with a complete set of financial statements.

Setting the game up and getting started:

In the class or lab before the exercise, students are given written directions to review. These directions are included in Appendix C. To start the game, students set up an accounting system using whatever methodology they use in class. The methodology presented here is based on the worksheet model presented by Nitkin and Kirby-Jones (2010), but students can use the traditional methods of journal entries, T-accounts, and ledgers or the horizontal balance sheet method with columns for each account and rows for each transaction as presented in most introductory

accounting books. An accounting system using the worksheet model (Nitkin & Kirby-Jones 2010) is presented as Exhibit 1.

Once a recording system is created students will choose a business. The business cards can display a capitalization level for the firm, in this case \$1,000 (in thousands) or display the typical distribution of assets, liabilities, and owners' equity for the relevant industry.¹ See the business cards in Appendix B for an example.² Once a business is chosen, students will use the information on the card students to enter beginning balances in each of the accounts in their accounting system. As the information on the card provides the percentage distribution, the value of the business is multiplied by the relevant dollar values to get the dollar values for each individual account. The cards set the capitalization level of the firms at \$1 million or \$1,000 (in thousands). As a result, beginning balances for accounts are set at \$1,000 times the relevant percentage. The initial set up for a retail bakery is displayed in the first two columns of the worksheet presented in Exhibit 2.

Play

Once the initial set up is complete, the game proceeds much like two popular board games: Monopoly™ or the Game of Life™. Students roll a die and take turns moving around the board. Each space on the board is labeled Operating, Investing, or Financing activity. A layout of the board is provided in Appendix B. After moving the number of spaces indicated, students take a card from the top of the Operating, Investing, or Financing deck depending on the label of the spot where they landed. Cards include both recordable and non-recordable events. They also describe both cash and accrual transactions. Typical operating activity transactions include providing services for cash or on credit, purchasing inventory or supplies for cash or on credit, receiving cash advances from customers, and incurring expenses. Typical investing activity transactions include buying and selling long term assets for cash or credit, while typical financing activity transactions include raising money from shareholders or creditors, paying dividends, and repaying debt. Students should read, interpret, and record the economic event that is described. Some examples of transaction cards are provided in Appendix B. The first transaction recorded on the worksheet in Exhibit 3 reads "Provided goods to customers and billed them \$30K." The student should record that a transaction occurred by indicating in the description line that the firm earned "revenue on credit." Further the student will increase both Accounts Receivable and Revenue by \$30K³. Finally the student should note that the transaction was a non-cash transaction (NC).

Before moving on to the next student, another student in the group should verify that the transaction was recorded appropriately. This increases the number of transactions that each student must interpret providing additional opportunity for practice and reinforcement while demonstrating the benefits of co-opetition. Play continues from student to student until all students have taken 10 turns. If students get to the end of the board before completing 10 turns, they should continue to choose transaction cards as they circle around the final loop of the board. If students complete 10 turns and are not yet at the end of the board, they should proceed directly to the trial balance space. At

¹ The distribution percentages are taken from Risk Management Associates Annual Statement Studies. The RMA information is available both in a print version (Annual Statement Studies) and electronically (eStatement Studies) through a subscription service. Students can be given the percentages on the business cards or can either be given the source data or asked to find the source data themselves. Having students engage with the RMA data adds another benefit to the game as it provides an opportunity to introduce students to this essential resource. More detail about using the RMA data is provided in Appendix D.

² A detailed card is provided for the retail bakery industry. The card lists the dollar value for individual asset, liability, and owners equity accounts. Accounts have been consolidated on the card due to space constraints. The other cards that are displayed just list the capitalization level of the firm. All cards can be modified as needed.

³ In the worksheet model presented here, revenues are recorded directly as additions to retained earnings and expenses are recorded directly as reductions to retained earnings. Alternately, rows can be added to the bottom of the worksheet model for revenue and expense accounts. These accounts would then be closed to retained earnings at the end of the accounting period. Another alternative is to record all transactions and adjustments using journal entries or T-accounts as per instructor preference.

this point they should sum account totals and create a trial balance verifying that assets equal liabilities and owners' equity. The set up for this is embedded in the worksheet model that is presented. If using journal entries, ledgers, and T-accounts, students should be directed to create a formal trial balance.

The next step in the accounting cycle is to complete adjustments. There are 5 spaces at the end of the board for adjustments. Students are instructed to move from space to space, pick a card and follow the directions to complete the adjustments. Some of the adjustments involve deferral accounts such as using supplies, selling inventory, or recognizing depreciation of fixed assets. Other adjustments involve accruals such as recording utilities that have been used or earning unbilled revenue. For the adjustments, cards either provide specific dollar values or include adequate information to calculate the value of the adjustment. For example, the card may direct students to record earning previously unearned revenue of \$50K or may stipulate that one quarter of the unearned revenue in the trial balance has been earned by the end of the period.

Once all of the adjustments are completed, students complete any closing entries and prepare a post adjustment balance. As a last step, students put together a set of financial statements including an income statement, a statement of retained earnings, a balance sheet and a cash flow statement. The worksheet model that is presented facilitates creating a cash flow statement using the direct method. By investigating the cash flow notation, all transactions that impacted cash can be mapped back to operating, investing or financing activity. For example, cash inflows from operating activity is associated with cash from customers while cash outflows from operating activity is associated with cash paid to suppliers and employees. A full set of financial statements is provided in Exhibit 4.

Section 3: Grading and Assessment

The game can be played simply for review and reinforcement, as a pre-midterm review, or can be used as a graded assignment. In grading the transaction analysis and journal entries, specific transactions are graded by assessing what the students recorded for the transaction in light of the description they wrote. For example, if the student noted that the company "issued stock," cash and contributed capital should both be increased by debiting and crediting the accounts respectively. A second method to grading transactions and adjustments would be to number each of the transaction and adjustment cards, have students list the card number in place of a description of the economic event and then automate the corrections by inputting the solutions into a homework manager software system. Grading the end financial statements requires reconciling each students work for consistency with generally accepted principles. If a professor teaches many sections of introductory accounting, they might use upper class accounting majors or graduate assistants to check students' journal entries and financial statements.

Beyond grading, it is important to assess the usefulness of a learning tool against its goals and objectives. The goal of this simulation is to provide a hands-on, interactive learning tool to review and reinforce the steps of the accounting cycle while actively engaging students in the learning process and demonstrating the benefits of co-opetition. But a number of questions arise from these objectives. First, do students perceive the game to be a valuable addition to the course? Second, does the exercise in fact provide an effective method for reviewing and reinforcing the steps of the accounting cycle? Finally, does the exercise help highlight the benefits of peer teaching and learning? To answer these questions, a short survey was distributed to students at the end of the simulation. The survey included seven statements about the game and asked student to rate the degree with which they agreed with the statements. Students were given a five point scale to use in rating the game with 1 indicating strong disagreement and 5 indicating strong agreement. The survey is attached in Appendix C and the results are presented in Exhibit 6. Students were also given the opportunity to add comments.

To date, the game has been used for 4 semesters with 8 sections of introductory accounting. The survey results capture student feedback from 62 students over the past two semesters. In regards to the first question, student responses indicate that they felt the game was well structured (4.73 on a 5 point scale), that the game provided a good way to review for the midterm (4.6 on a 5 point scale) and that they would recommend continued use of the game in future semesters (4.87 on a 5 point scale). In regard to the second question, all but 2 students either mildly or strongly agreed that the game helped them better understand how to actually complete the accounting mechanics.

Ratings on the questions about understanding the accounting mechanics ranged from 4.2 -4.3 on a 5 point scale. Some students commented that they already had a good grasp of the material and therefore marked “mildly agreed” rather than “strongly agreed.” In regards to the final question, on the impact of working with classmates, the average response was 4.13 on a 5 point scale. While the average was a bit lower than the average on the other questions, the distribution of responses was similar to the responses on previous questions. All but three students responded that they either mildly or strongly agreed that working with peers helped them better understand and apply the accounting concepts. Additionally, half of the students added comments that working though the accounting cycle with classmates was helpful. One student added that she was able to discuss her analysis and gain a better understanding of the accounting cycle. Still another commented that it made her more confident with her analysis of transactions and adjustments. A number of students commented that the peer to peer help was fun and made it easier for them to interact with and get to know their classmates. All told, the game was viewed as a positive, value-added exercise.

While a qualitative assessment of the value of the game from a student perspective is presented above, given the call for assessment to be an ex ante consideration in course design (Massey & Van Hise 2009; Lavoie and Rosman 2007), it would be valuable to test whether the simulation had a quantitative impact. Since the “Game of Business” is used as a review for the midterm, it might be beneficial to compare midterm grades for students who played the game to midterm grades for those students who did not complete the game. Since accounting knowledge builds on itself, it might also be useful to compare retention of material over the course of the semester by partitioning students into groups based on whether they played the Game of Business or not. Either of these assessments could be completed in a larger institution with multiple sections of the same class, but are impractical a smaller setting. In doing this it would be important to controlling for factors such as student ability.

Section 4: Simulation Modifications and Extensions and Conclusion

There are numerous modifications that can be done when using the “Game of Business” as a class exercise to extend its usefulness as an interactive exercise. As already noted, any accounting methodology can be used for the mechanics of the accounting cycle. Although the worksheet method is presented in this paper as the framework for the underlying accounting system, ledgers and T-accounts, a horizontal balance sheet, a computerized accounting program or any other accounting methodology can be used. In this way, the game can be tailored to any instructor’s preferred teaching style and methodology.

In setting up the game, students could be asked to choose an industry and then find the appropriate Annual Statement Studies eStatement in order to determine the distribution of funds rather than providing business cards and a stock set of eStatement data.⁴ If students choose their own industry, they should be instructed to print out the relevant data from the Annual Statement Studies for the industry they have chosen. This allows for more in-depth work with the eStatement Studies database. On the opposite end of the spectrum, these steps can be skipped altogether by providing students with worksheets that are already set up for specific industries. In this case, the initial financing, investing and operating could be pre-entered into the worksheet. Finally, one industry could be used as the starting point for all students and students could compare ending results and see how results differ due to differences in actual transactions.

In playing the game, different sets of transaction cards can be used. The game as presented here has been used as a review for the midterm. Therefore, the transactions cards include economic events that are fairly typical of the types of transactions that would be presented in the first few chapters of most introductory accounting books. The use of the game could be extended as a review for the final in an introductory accounting class or as an exercise in more advanced accounting classes by developing sets of cards that include more complex transactions. Alternately, rather than providing cards with transactions, faculty can require students to each prepare a set of transaction cards. If

⁴ During the course of the semester, students in my Introductory Accounting class track a publicly traded company. By the end of the semester they create a set of financial statements for the company and write an analysis of the company comparing performance over time and comparing the company to an industry benchmark. They use the Annual Statement Studies as the source of the industry benchmark information. Hence, students could easily be asked to find the industry information for the company that they are focusing on for the term project.

students are asked to prepare transaction cards, they should be encouraged to create cards that span operating, investing and financing activity. They should also be encouraged to prepare cards that reflect both cash and non-cash transactions as well as cards that do not result in recording a transaction at all.

In completing adjustments, different directions can be given. Students could be asked to complete adjustments for supplies, inventory, unearned revenue, taxes, or salaries for example based on what they think would be typical for the kind of company they chose. They could also be asked to define the assumptions they use in determining the dollar value of the adjustments. For example, faculty might ask that student make assumptions or do research to determine relevant interest rates, tax rates, useful life, or salvage value.

The goal of this simulation is to provide a hand-on, interactive approach to review the accounting cycle, while reinforcing the link between transactions, types of business activity, and cash flows. Completing the game in class has an added benefit as it "forces" all students to participate even those students who rarely do homework. Additionally, it provides students with the opportunity to interpret, record, and verify a large number of transactions in a relatively short period of time. At the same time, the simulation encourages group work and discussion in interpreting and recording transactions and adjustments thereby shifting the focus of teaching away from the professor and onto the students, reinforcing the value of cooperative teaching and learning.

Note: Files for creating a full set of business cards and transaction cards are available upon request

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Exhibit 1: Worksheet Model Template										
Transaction Analysis										
Company Name										
Time Period										
Unit of Measure:										
Description										Trial
Transaction number										Balance
Cash Flow(O, I, F, or NC)										
Cash										
Trade receivables										
Inventory										
Other current assets										
Fixed assets										
Intangibles										
Other long term assets										
Total Assets										
Notes payable-short term										
Trade payables										
Unearned revenue										
Accrued payables										
Long term debt										
All other non-current liabilities										
Contributed capital (net worth)										
Retained earnings										
Total Liabilities & Net Worth										
Retained earnings explanation										

Exhibit 2: Worksheet Model									
Transaction Analysis									
Company Name	Bakers Best Bakery								
Time Period	For month ending October 31								
Unit of Measure:	Dollars in thousands								
Description	initial set up	Records transactions based on description on cards							Trial Balance
		Credit revenue	Collected cash	Sold inventory	Bought PPE	Bought computer	Issued stock	Paid dividend	
Cash Flow(O, I, F, or NC)		NC	F		I	O	F	F	
Cash	139		20		-160	-5	200	-12	182
Trade receivables	20	60	-20						60
Inventory	64			-30					34
Other current assets	32								32
Fixed assets	526				160	5			691
Intangibles	109								109
Other long term assets	110								110
Total Assets	\$1,000								\$1,218
Notes payable-short term	109								109
Trade payables	101								101
Unearned revenue	2								2
Accrued payables	206								206
Long term debt	359								359
All other non-current liabilities	117								117
Contributed capital (net worth)	106						200		306
Retained earnings		60		-30				-12	18
Total Liabilities & Net Worth	\$1,000								\$1,218
Retained earnings explanation		revenue		COGS				dividends	

Company Name	Bakers Best Bakery					
Time Period	For month ending October 31					
Unit of Measure:	Dollars in thousands					
		Record adjustments				
Transaction	Trial Balance	Unpaid wages	Earned unearned revenue	Incurred utility expense	Earned but unbilled revenue	End Balance
Cash Flow(O, I, F, or NC)		NC	NC	NC	NC	
Cash	182					182
Trade receivable	60				40	100
Inventory	34					34
Other current assets	32					32
Fixed assets	691					691
Intangibles	109					109
Other long term assets	110					110
Total Assets	\$1,218					\$1,258
Notes payable-short term	109					109
Trade payables	101					101
Unearned revenue	2		-1			1
Accrued payables (salary, utilities)	206	10		4		220
Long term debt	359					359
All other non-current liabilities	117					117
Contributed capital (net worth)	306					306
Retained earnings	18	-10	1	-4	40	45
Total Liabilities & Net Worth	\$1,218					\$1,258
Retained earnings explanation		salary	revenue	utilities	revenue	

Exhibit 4: Financial Statements			
Bakers Best Bakery		Bakers Best Bakery	
Income Statement		Statement of Retained Earnings	
for month ending October 31, 2010		for month ending October 31, 2010	
dollars in thousands		dollars in thousands	
Revenue	\$101	Beginning Balance, as of Oct 1	\$ -
Expenses		Net Income	\$57
COGS	30	Dividends	(12)
Salary Expense	10	End Balance, as of Oct 31	<u>\$45</u>
Utility Expense	4		
Total Expenses	<u>44</u>		
Net Income	<u>\$57</u>		
Bakers Best Bakery			
Balance Sheet			
as of October 31, 2010			
Dollars in thousands			
Current Assets		Current Liabilities	
Cash	\$ 182	Notes Payable-Short Term	\$ 109
Trade Receivable	100	Trade Payables	101
Inventory	34	Unearned Revenue	1
Other Current Assets	32	Accrued Payables	220
Total Current Assets	<u>348</u>	Total Current Liabilities	<u>431</u>
Long Term Assets		Long Term Liabilities	
Fixed Assets	691	Long Term Debt	359
Intangibles	109	All Other Non-Current Liabilities	117
Other Long Term Assets	110	Total Long Term Liabilities	<u>476</u>
Total Long Term Assets	<u>910</u>	Total Liabilities	907
Total Assets	<u>\$ 1,258</u>	Owners Equity	
		Contributed Capital (net worth)	306
		Retained Earnings	45
		Total Owners Equity	<u>351</u>
		Total Liabilities and Owners Equity	<u>\$ 1,258</u>

Exhibit 4: Financial Statements (con't)

Baker's Best Bakery
Cash Flow Statement
for month ending October 3, 2010
dollars in thousands

Operating cash flow	
Cash from customers	\$20
Cash paid to supplies and employees	<u>(116)</u>
Change in cash from operating activity	(96)
Investing cash flow	
Cash received from sale of long term assets	
Cash paid to purchase long term assets	<u>(910)</u>
Change in cash from investing activity	(910)
Financing cash flow	
Cash received from creditors	894
Cash received from stock issuance	306
Cash repaid to creditors	
Cash paid to repurchase stock	
Cash dividends paid	<u>(12)</u>
Change in cash from financing activity	<u>1182</u>
Net change in cash	<u><u>\$182</u></u>
End balance of cash	\$182
Beginning balance of cash	<u>0</u>
Net change in cash	<u><u>\$182</u></u>

Exhibit 5: Results of Student Survey

Do students perceive the game to be a valuable addition to class?	
1) The game was well structured and well organized.	4.73
2) The game was a good way to review before the midterm.	4.6
3) I would recommend using the game again in future classes.	4.87
Does the exercise provide an effective method to review and reinforce the steps of the accounting cycle?"	
4) The game helped me better understand setting up an accounting system to record the accounting cycle.	4.27
5) The game helped me better understand how to evaluate and record transactions.	4.3
6) The game helped me better understand how to evaluate and record adjustments.	4.2
Does the exercise help highlight the benefits of peer teaching and learning?	
7) Working with my classmates helped me better understand and apply the accounting concepts.	4.13

Sample demographics

Freshman	14
Sophomores	22
Juniors	18
Seniors	<u>8</u>
Total Sample	<u>62</u>

All questions were rated on a 1-5 scale with 1 indicating strongly disagree and 5 indicating strongly agree.

Appendix A: The Game of Business Directions

Setup:

1. Divide the cards by category and shuffle. Put them on the appropriate spot on the board.
2. To play, each person must set up their business.
 - A. Set up an accounting worksheet. List the accounts that are present in the common size industry statements. Add Retained Earnings to Owners' Equity.
 - B. Add start-up money based on industry benchmark data. Assume that each business starts with \$1,000,000 (or 1,000 dollars in thousands)
 - i. Complete initial "financing" activity
 - a. Increase cash → +1,000,000 or \$1,000 in thousands
 - b. Increase Contributed Capital and the liability accounts based on the percent distribution found on annual statement studies worksheet.
 - ii. Complete the initial investing activity
 - a. Increase all the long term assets accounts based on the percent distribution found on the annual statement studies worksheet. The increases equal \$1,000,000 (or \$1,000 in thousands) times the percent distribution
 - b. Decrease cash by the total value allocated to the long term asset accounts
 - iii. Complete the initial operating activity
 - a. Increase all the current assets accounts based on the percent distribution found on the annual statement studies worksheet. The increases equal \$1,000,000 (or \$1,000 in thousands) times the percent distribution
 - b. Decrease cash by the total value allocated to current asset accounts (except cash)
3. Choose a token for moving around the board. Roll the dice to see who goes first.
4. Start operating your business. Roll the dice and move the indicated number of spaces.
5. Choose an appropriately labeled card and record transactions as needed.
6. Stop at trial balance spot and find trial balance even if your role would take you further.
 - a. Move ahead one space at a time, choose an adjustment card and complete the adjustments as indicated.
 - b. Find end balance and verify that $\text{Assets} = \text{Liabilities} + \text{Owners Equity}$.
7. Using your data, create a set of financial statements in proper format.

Appendix B: Game Materials

Examples of Business cards

Bakery



From our kitchen to yours.

Cash & Equivalents	139
Accounts Receivable	20
Inventory and Supplies	64
Plant Property and Equipment	526
All Other Non-Current Assets	251
Notes Payable-Short Term	109
Accounts & Accrued Payables	309
Long Term Debt	359
Other Non-Current Liabilities	117
Net Worth	106

Charter Airline



Taking People & Goods
from Place to Place

Cost: \$1,000K


Jewelry Store



Diamonds are
Everyone's best friend

Cost: \$1,000K

Department Store



Try a little shopping
therapy

Cost: \$1,000K

Supermarket



Feeding the Neighborhood

Cost: \$1,000K

Computer Store




Bringing the future to
you

Cost: \$1,000K


Appendix B (con't): Game Materials

Examples of game cards

Operating Activity Cards




Delivered \$30K of goods to customers on account



Collected \$20K owed by customers on account

Investing Activity Cards




Bought an office building for \$160K. Paid cash.




Bought a new computer system for \$5K

Financing Activity Cards



Issued additional shares of stock for \$200K

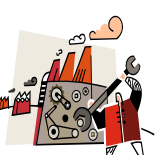


Paid dividends of \$12K to shareholders


Adjustment Cards




Firm has accrued but unpaid wages of \$10K



Firm received a utilities bill for \$4K. Bill is due next month



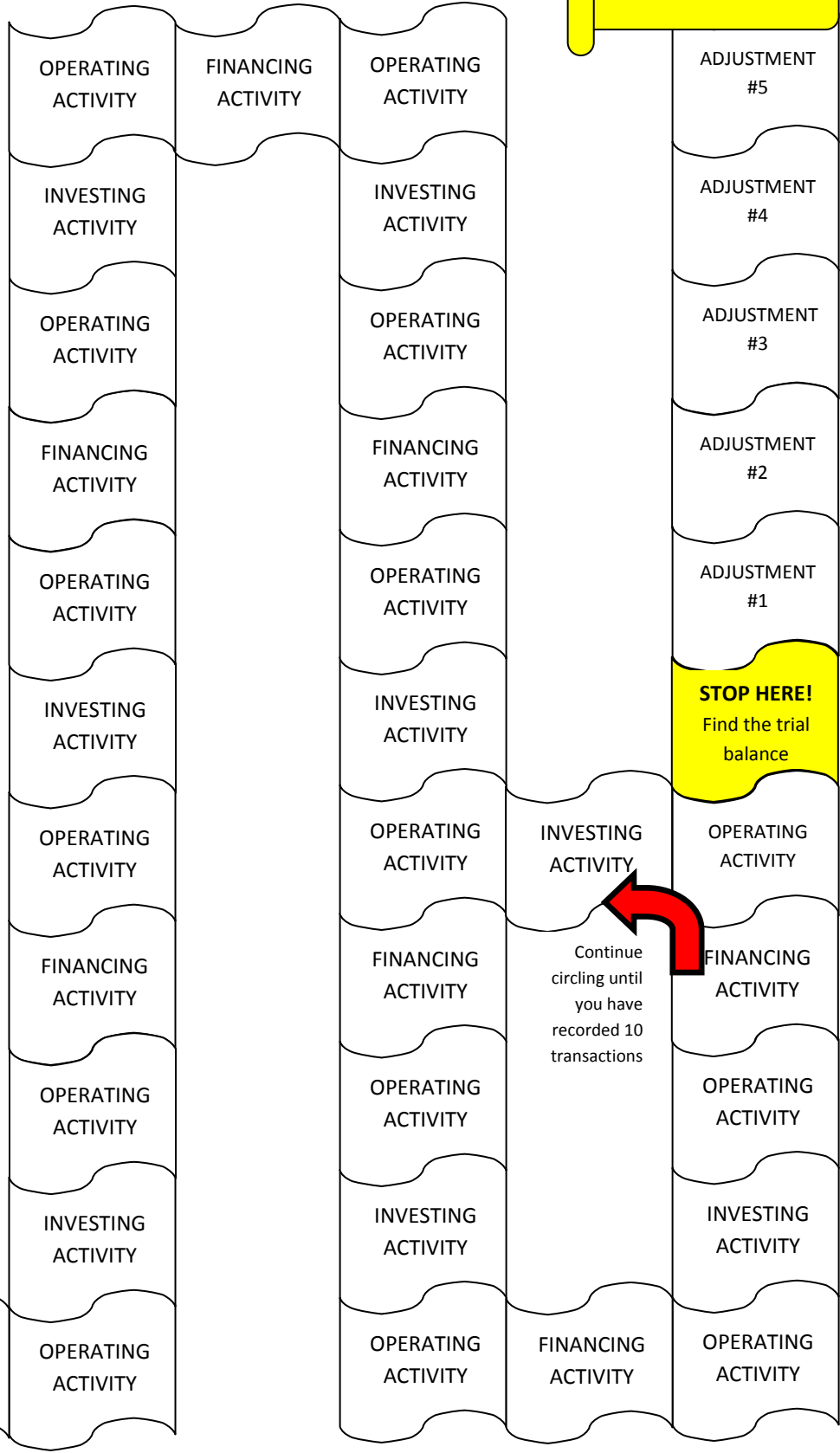
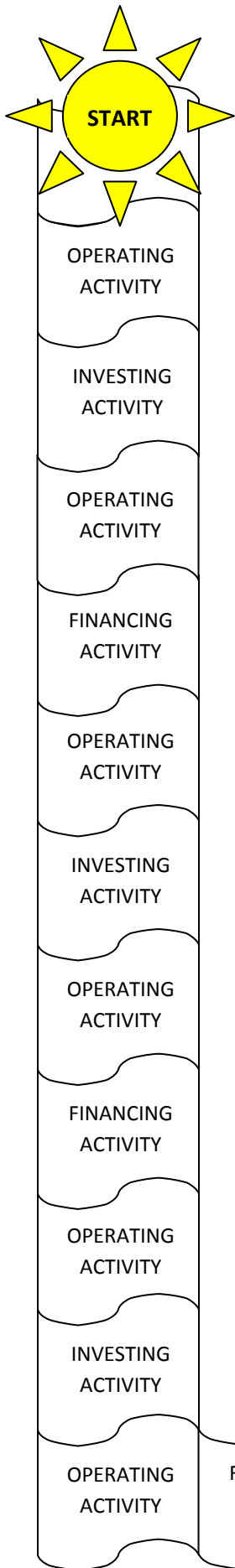
Firm has delivered ½ of the unearned revenue



Firm has \$40K of earned but unbilled revenue

Appendix B (con't): Game Materials

Board Layout



Appendix C: Game of Business Survey

Place an X in the appropriate box to below, to indicate your opinion about the Game of Business.

	Strongly disagree	Mildly disagree	Neutral	Mildly agree	Strongly agree
Do students perceive the game to be a valuable addition to class?					
1) The game was well structured and well organized					
2) The game was a good way to review before the midterm					
3) I would recommend using the game again in future classes					
Does the exercise provide an effective method to review and reinforce the steps of the accounting cycle?"					
4) The game helped me better understand setting up an accounting system to record the accounting cycle					
5) The game helped me better understand how to evaluate and record transactions					
6) The game helped me better understand how to evaluate and record adjustments					
Does the exercise help highlight the benefits of peer teaching and learning?					
7) Working with my classmates helped me better understand and apply the accounting concepts					

The best thing about the game was.....

One way to improve the game would be

Appendix D: Using Industry Information

Beyond using the game as a review for an accounting midterm, the game can be used to introduce the students to industry information. One source of industry information is Risk Management Associates (RMA). The RMA information is available both in a print version (Annual Statement Studies) and electronically (eStatement Studies) through a subscription service. It is useful for financial statement analysis and other business related projects. It can be introduced in the context of the Game of Business in order to familiarize students with the resources. The database provides Financial Ratio Benchmark (FRB) data and Industry Default Probability (IDP) data. Among other data, common size industry benchmarks for the percentage distribution of assets, liabilities, and owners' equity is included. The data is categorized by value of assets, value of total sales, and history. Students use this common size information as the basis for setting up an accounting system for their firm. To prepare students for the Game of Business, faculty should preview the database with their students focusing on the common size data that students will use to create a balance sheet for the Game of Business exercise. The common size data is found on the FRB worksheets. A copy of the data that students are provided with is presented below. The table provides the percent distribution of sources and uses of funds for the current year for ten types of businesses. The businesses align with those included in the set of business cards.

Using the distribution of assets, liabilities, and owners' equity appropriate for their type of business, students will multiply the capitalization level of their firm times the industry percentages to complete the initial financing, investing, and operating transactions. When setting up the worksheet themselves, students will record the financing mix by focusing on the distribution information provided in the "LIABILITIES" section of the Annual Statement Studies common size data. While firms can be given differing initial values, for simplicity, students can be instructed that the starting capitalization of every business is \$1,000,000 or \$1,000 (in thousands). To complete the financing activity, students will add \$1,000 (in thousands) to cash and will use the percent distributions provided in the "LIABILITIES" section to allocate funds to contributed capital (net worth) and to the various liabilities. The example displayed in Exhibit 3 is based on the Retail Bakery industry data presented in Exhibit 1. In this industry, on average, 10.9% of funds come from Short-Term Note Payable, 10.1% from Trade Payables, 0.2% from Unearned Revenue, 20.6% from Accrued Payables, 35.9% from Long Term Debt, 11.7% from Other Long-Term Liabilities, and 10.6% from Net Worth or Contributed Capital. The \$1,000 (dollars in thousands) of initial firm value is multiplied by these percentages to determine the relevant dollar value. For ease of tracking all dollar values are recorded in thousands. So, to record the source of funding, Cash is increased (debited) \$1,000 while the following liability and owners' equity accounts are also increased (credited): Short-Term Note Payable by \$109, Trade Payables by \$101, Unearned Revenue by \$2, Accrued Payables by \$206, Long Term Debt by \$359, Other Long Term Liabilities by \$117, and Contributed Capital by \$106. With each transaction, students map the cash transactions back to operating, investing, or financing activity. There is a row built into the worksheet model for keeping track of sources and uses of cash. The notation of the type of business activity associated with cash flows will facilitate creating a cash flow statement at the end of the accounting period. In this case, the student should note that the increase in cash reflects financing (F) activity.

The "ASSET" section of the Annual Statement Studies common size statements is used to record the initial investing activity. Again, students should multiply the \$1,000 (in thousands) value of the business, by the percentages provided to determine the allocation of funds across long term assets. Using the Retail Bakery industry, \$1,000 (dollars in thousands) will be multiplied by 52.6% to get \$526 for Fixed Assets, by 10.9% to get \$109 for Intangibles, and by 11.0% to get \$110 of Other Long Term Assets. To record the initial investing activity, student will increase (debit) Fixed Assets by \$526, Intangibles by \$109, and Other Long Term Assets by \$110 and decrease (credit) Cash by \$745 (the total of the investments). In tracking cash flows, the acquisition of long term assets is noted as investing activity (I).

The final step in the set up is to record the initial operating activity. As before, the "ASSET" section of the Annual Statement Studies common size statements provides the percentage distribution for the current assets. Students will again multiply the \$1,000 (in thousands) value of the business, by the percentages provided to determine the allocation of funds across current assets. Using the Retail Bakery industry, \$1,000 (dollars in thousands) will be multiplied by 2.0% to get \$20 for Trade Receivables, by 6.4% to get \$64 for Inventory, and by 3.2% to get \$32 of Other Current Assets. To record the initial operating activity, student will increase (debit) Trade Receivables by \$20, Inventory by \$64, and Other Current Assets by \$32 and decrease (credit) Cash by \$116 (the total funds moved into operating accounts). In tracking cash flows, the acquisition of current assets is noted as operating activity (O). Once

the initial set up activity is completed, students should verify that assets equal liabilities plus owners' equity before proceeding with the accounting cycle.

As described in the body of the paper, rather than having students use the RMA data directly, they can be given business cards with the dollar values for each account or they can be provided with a worksheet or t-accounts that are already set up with beginning balances.

Appendix D: 2009-10 Annual Statement Studies										
Common size distribution of assets and of liabilities and net worth (owners equity)										
	Retail Bakery	supermarket	charter airlines	computer store	department store	jewelry store	mens clothing stores	automobile manufacturing	amusement parks	charter bus service
Number of Statements	2,957	839	53	69	35	172	66	46	111	114
ASSETS										
Current Assets										
Cash & Equivalents	13.9	13.9	13.2	14.6	9.7	7.2	11.1	10.7	11.1	8.9
Accounts Receivable	2.0	4.2	18.2	26.5	5.4	23.9	7.1	19.8	1.6	9.4
Inventory and Supplies	6.4	29.8	6.1	26.8	50.4	43.0	47.2	30.9	3.3	1.8
Prepaid Rent and Insurance	3.2	3.2	5.6	5.3	1.1	1.5	2.6	2.4	3.6	3.6
Total Current Assets	25.5	51.1	43.1	73.2	66.6	75.6	68.0	63.8	19.6	23.7
Long Term Assets										
Plant Property and Equipment (net)	52.6	34.0	40.2	14.7	24.5	14.2	19.5	25.2	66.4	64.9
Intangibles (net)	10.9	4.9	3.7	5.0	2.5	2.5	3.7	3.4	2.8	2.6
All Other Non-Current Assets	11.0	10.0	13.0	7.1	6.4	7.7	8.8	7.6	11.2	8.8
Total Long Term Assets	74.5	48.9	56.9	26.8	33.4	24.4	32.0	36.2	80.4	76.3
Total Assets	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
LIABILITIES										
Current Liabilities										
Notes Payable-Short Term	10.9	8.0	11.8	17.6	11.4	27.0	11.0	21.1	10.3	16.2
Accounts Payables	10.1	18.1	11.1	16.5	13.8	14.2	24.2	13.9	4.4	4.5
Unearned Revenue	0.2	0.1	10.7	0.2	0.1	0.5	0.2	0.3	3.3	2.3
Accrued Payables (ie salary, utility)	20.6	11.2	9.8	9.1	9.9	14.0	10.8	13.5	9.5	9.0
Total Current Liabilities	41.8	37.4	43.4	43.4	35.2	55.7	46.2	48.8	27.5	32.0
Long Term Liabilities										
Long Term Debt	35.9	24.0	37.9	9.2	17.7	10.4	20.2	10.0	39.8	45.4
All Other Non-Current Liabilities	11.7	8.5	4.7	6.3	8.7	4.0	6.0	16.8	11.0	6.0
Total Long Term Liabilities	47.6	32.5	42.6	15.5	26.4	14.4	26.2	26.8	50.8	51.4
Total Liabilities	89.4	69.9	86.0	58.9	61.6	70.1	72.4	75.6	78.3	83.4
Owners Equity										
Net Worth	10.6	30.2	14.1	41.0	38.3	30.0	27.6	24.4	21.7	16.6
Total Liabilities & Net Worth	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0