

Backward Design for Intermediate Financial Accounting 2

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The accounting curriculum is overburdened by a nearly-impossible scope of material, as textbooks attempt comprehensive coverage of CPA exam material. The effective professor, however, must make tough choices about what to focus on - and even more importantly, what not to focus on. Backward Design provides a framework in which to make these choices. Under Backward Design, assessment is planned before the design of learning-experiences and instruction-plans. This paper describes how an Intermediate Accounting 2 professor used Backward Design to consciously choose to de-emphasize CPA exam coverage and to emphasize the informational role of financial statements.

“To begin with the end in mind means to start with a clear understanding of your destination. It means to know where you're going so that you better understand where you are now so that the steps you take are always in the right direction.”

—Stephen R. Covey, *The Seven Habits of Highly Effective People*
(Wiggins & McTighe 1998)

BACKWARD DESIGN IN THE ACCOUNTING CURRICULUM

The concept of Backward Design is a teaching philosophy popularized by Wiggins & McTighe (1998) and applied primarily at primary and secondary school levels. At its core, it mistrusts traditional textbooks and curriculum as anachronistic. Instead, it seeks to find desired outcomes for students, and it aims to teach and assess based on the desired outcomes. This flips the traditional approach of starting with the text and existing curriculum, and then determining assessment based on the material in the textbook. Under Backward Design, assessment is informed by the objectives; and the learning experiences and instruction are tailored to help students to perform well enough to demonstrate competence and hopefully excellence.

The key to Backward Design is choosing the desired results or learning objective. This paper assumes that the goal of the course is to familiarize the student with the role of financial statements from a user's perspective. However, Backward Design can be implemented regardless of what the teaching goal is. The key is that there be conscious teaching goal. In terms of the teaching goal chosen for the accounting course, ours lies in the middle of a continuum. At one end of the continuum is the traditional approach to comprehensively cover the knowledge-base in the text (i.e. CPA coverage). The other end of the continuum views accounting education merely as a context in which to teach more general skills such as creative and critical thinking (Bonk & Smith 1998). My chosen teaching goal is somewhere in the middle. While my goal is not a comprehensive coverage of all CPA-exam material, I recognize that the

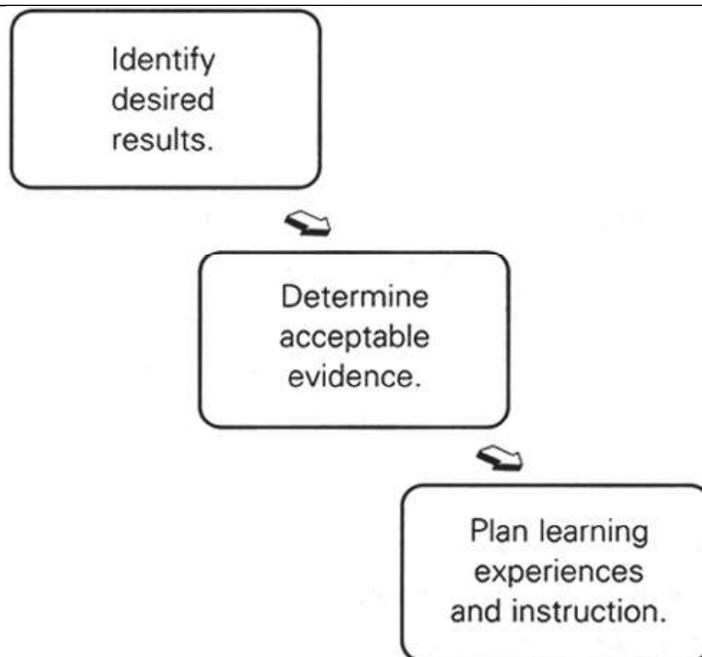
primary goal of the course is for students to gain proficiency in understanding financial statements. My objective is not merely for students to be able to analyze financial statements, but also to be able to prepare them.

Education fads come and go, and the reader may be excused for wondering how Backward Design relates to the current craze for the “flipped classroom” (Diaz 2016) and its predecessor “problem-based learning” (Johnstone & Biggs 1998; Stanley & Marsden 2012). Related to these trendy themes are the concept of “team-based learning” and “active-based learning” (Clinton & Kohlmeyer 2005; Opdecam & Everaert 2012; Michaelsen & Sweet 2009; Knewston 2014). The answer is that these approaches deal with the methodology or tactics of effective teaching and learning. Backward Design, on the other hand, asks a much more fundamental question: What skills or knowledge do we want our students to learn in this course (without prior reference to the detailed contents of the textbook chapters)?

Although Backward Design is not directly related to the current concept of Design Thinking, it shares certain elements in common, notably the importance for the designer (the professor) to think from the perspective of the user (the student). Design Thinking often applies two old ideas to solve an emerging problem (Fyffe & Lee 2016). The same can be said for Backward Design. In this respect, the Backward Design approach of this essay applies the case study approach towards assessment and learning planning.

According to Wiggins and McTighe, there are three steps to rethinking a course using backward design (see Figure 1). The first step is to identify the desired results. This is actually the critical step, and the answer does not begin with looking at the detailed contents of the chapters of the text. Within this first step, Wiggins and McTighe provide a framework within which to identify and prioritize desired learning goals and curricular priorities. There are three concentric rings of knowledge in decreasing levels of importance: (1) Enduring understanding, (2) Important to know and do, and (3) Worth being familiar with (please see figure 2).

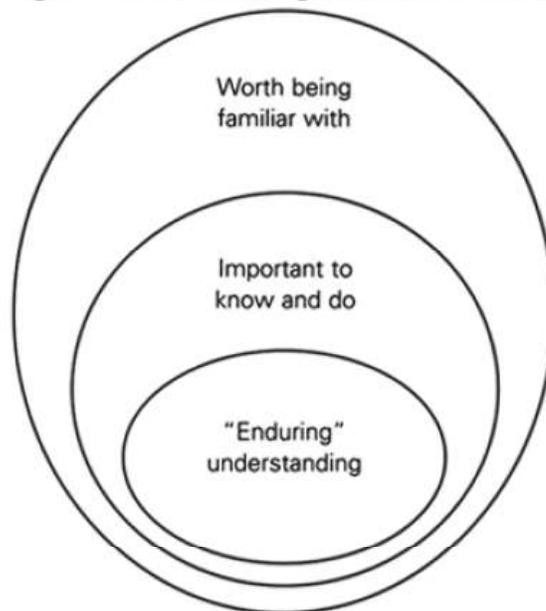
FIGURE 1
STEPS OF BACKWARD DESIGN



From Figure 1.1 Wiggins & McTighe (2005).

FIGURE 2
ESTABLISH CURRICULAR PRIORITIES FOR STEP 1, “IDENTIFY DESIRED RESULTS”

Figure 1.2. Establishing Curricular Priorities



From Figure 1.2 Wiggins & McTighe (2005).

The innermost ring “Enduing understanding” represents enduring understanding we want our students to hold on to well after they have left the course, graduated, and passed the CPA exam (in the case of accounting). In my subjective opinion, owners’ equity is such a concept. Without an enduring understanding of owners’ equity, the student does not truly know what financial statements represent. The middle ring “Important to know and do” represents skills that are important to know and do, but do not reach the level of enduring knowledge. An example of this might be effective interest for bond discount and premiums. Effective interest is important not just because it is current accounting practice. The skills learned by practicing this concept lies at the core of what accountants do, even if the student will never work with bonds payable in his/her later career (in this paper, however, Bonds Payable are actually relegated to “Worth being familiar with”). At the outer-most level “Worth being familiar with” are specific rules such as accounting changes. While knowledge of these topics is important for the CPA exam, they do not represent important skills that transfer to other areas of the accounting curriculum.

The three steps in backward design are to identify the desired results, determine acceptable evidence, and to plan learning experiences and instruction. The second and third steps obviously follow from the first step, which is therefore the critical step. Below, we outline an application of these three steps towards the accounting curriculum in general and to intermediate accounting 2 in particular.

Step One - Identify Desired Results

The course objective is for students to understand the role of the accountant as a preparer of financial statements used by investors to make investment decisions.

Curricular Priorities

Within the first step of setting course objectives, Backward Designs identifies topics and assigning them levels of priority. These levels, in descending order of importance and durability, are (1) Enduring

understanding, (2) Important to know and do, and (3) Worth being familiar with (please see figure 2 above).

Note that the conventional course objective for many financial accounting courses - to prepare students with knowledge and skills needed to pass the CPA exam and work as accountants - was not chosen. This essay does not advocate for one course objective over another, but merely aims to demonstrate how Backward Design can be used to accomplish any chosen course objectives. If the course objective had been different, then the course would be designed completely differently.

Step Two - Determine Acceptable Evidence

Achievement of desired results will be evidenced when students are able to identify and understand key accounts and disclosures on the financial statements and how they affect key ratios.

Step Three - Plan Learning Experiences and Instruction

The rest of the paper describes the learning experiences and instruction plan to facilitate acceptable evidence of the achievement of the desired learning. The remainder of the paper is organized as follows. Section II discusses the curricular priorities established for the course. Section III presents the acceptable evidence (i.e. assessment); and the plan of learning experiences and instruction; and section V concludes.

ESTABLISHING CURRICULAR PRIORITIES

As stated, the key to implementing Backward Design is step 1 (identify desired results). It is at this step that tough choices must be made using the framework in figure 2. A sub-step within the first step is to establish curricular priorities, that is – which topics and sub-topics in the curriculum will get greater or lesser focus. Figure 3 and 4 show the contents of a typical intermediate accounting 2 course, using the table of contents of the widely used Spiceland et al (2015) text *Intermediate Accounting*.

FIGURE 3

TABLE OF CONTENTS, INTERMEDIATE ACCOUNTING, SPICELAND 8TH EDITION 2015

<i>Chapter</i>	The Role of Accounting as an Information System
1	Environment and theoretical structure of financial reporting
2	Review of the Accounting Process
3	The Balance Sheet and Financial Disclosures
4	The Income Statement, Comprehensive Income, and the Statement of Cash Flows
5	Revenue Recognition and Profitability Analysis
6	Time Value of Money Concepts
	Economic Resources
7	Cash and Receivables
8	Inventories: Measurement
9	Inventories: Additional Issues
10	Property, Plant, and Equipment and Intangible Assets: Acquisition and Disposition
11	Property, Plant, and Equipment and Intangible Assets: Utilization and Impairment
	Financial Instruments and Liabilities
12	Investments
13	Current Liabilities and Contingencies
14	Bonds and Long-Term Notes
15	Leases
16	Accounting for Income Taxes
17	Pensions and Other Postretirement Benefits
18	Shareholders' Equity

Additional Financial Reporting Issues

- 19 Share-Based Compensation and Earnings Per Share
 - 20 Accounting Changes and Error Corrections
 - 21 The Statement of Cash Flow Revisited
-

At the author's university, we had previously used a different text, so the chapters assigned to intermediate financial accounting 2 represent a hodgepodge of the Spiceland chapters. The following eight chapters are covered (see Figure 4): revenue recognition, investments, contingencies, bonds payable, taxes, equity, accounting changes, and cash flows. In the author's opinion, this selection of chapters is not necessarily coherent or ideal. Rather, this paper views the assignment of chapter topics as a given, and asks how best to approach the teaching of these topics.

FIGURE 4

INTERMEDIATE ACCOUNTING 2 CHAPTERS AT THE AUTHOR'S UNIVERSITY

Chapter The Role of Accounting as an Information System

- 5 Revenue Recognition and Profitability Analysis

Financial Instruments and Liabilities

- 12 Investments
- 13 Current Liabilities and Contingencies
- 14 Bonds and Long-Term Notes
- 16 Accounting for Income Taxes
- 18 Shareholders' Equity

Additional Financial Reporting Issues

- 20 Accounting Changes and Error Corrections
 - 21 The Statement of Cash Flow Revisited
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Recall that within the first step of setting course objectives, Backward Designs calls for identifying topics and assigning to them levels of priority. These levels, in descending order of importance and durability, are (1) Enduring understanding, (2) Important to know and do, and (3) Worth being familiar with (please see figure 2 above). I therefore identify topics that, in my view, are more or less important considering my course objectives. As a result the following chapters were assigned different priorities:

Level One: *Enduring understanding*

Owners' Equity

Level Two: *Know and do*

Taxes, Investments, Revenue Recognition, and Cash Flows

Level Three: *Be familiar with*

Revenue Recognition, Contingent Liabilities, Bonds Payable, Accounting Changes
(Some aspects of revenue recognition are assigned level 2 coverage; see discussion below.)

ACCEPTABLE EVIDENCE, LEARNING EXPERIENCES & INSTRUCTION

The following case-based approach can be applied to virtually any large U.S. public company, to assess whether students accomplished the course objectives. If students are able to answer these questions, it would indicate acceptable evidence that they reached the learning objectives and the desired results. The learning experiences and instruction is then tailored from the chapters to help students gain the skills and knowledge to demonstrate acceptable evidence for this case.

The case is sufficiently short for students to take an abbreviated version of it at the beginning of the semester and a comprehensive version at the end of the semester. This will demonstrate to both the students and instructor the progress students made throughout the semester in achieving the course objective.

The second and third steps of the Backward Design process are to determine acceptable evidence (i.e. to design assessment), and to plan learning experiences & instruction. The key feature of Backward Design is that the design of the assessment comes before the planning of learning experiences and instruction. Still, for the purpose of narrative flow in this paper, we will discuss learning experiences and instruction before assessment design.

Learning Experiences & Instruction

I divide the course into three units of roughly equal portions (about a third each) for grading purposes (please see Figure 5). The first unit consists of four topics of the lightest level of *be familiar with* coverage: revenue recognition, contingent liabilities, bonds payable, and accounting changes. Within these topics may be subtopics that get greater coverage, but I chose to de-emphasize these topics relative to other topics listed below.

Some accounting professionals and educators will take issue with de-emphasizing revenue recognition. In defend my choice to de-emphasize this topic, I note that revenue recognition standards are in flux and have changed over time. They consist mostly of rules rather than skills that are transferable to other areas of the accounting curriculum. Furthermore, revenue recognition standards are not uniform throughout industries and so any expertise gained in one company or industry is not necessarily transferable to other companies and industries. To adequately cover revenue recognition would take an entire semester.

At the same time, students need to be aware that the revenue recognition choices represent possibly the most critical accounting choices a company makes. In choosing what to emphasize, Backward Design indeed forces the instructor to make tough choices that might be considered questionable or controversial by colleagues.

The second unit of the course consists of Owners' Equity, which anchors the course as the only *enduring knowledge* topic, and Cash Flows, classified as *be familiar with*. Owners' Equity lies at the heart of the accounting system and is the nexus of the income statement and balance sheet. If there is one topic that students should have a clear *enduring knowledge* of, it is owners' equity.

The third unit consists of two *know and do* topics: Investments and Taxes. The reason why these topics get a higher level of coverage than Cash Flows is that they are scarcely covered in principles of accounting and in intermediate accounting 1. Furthermore, the knowledge of these accounts can differentiate the accounting student from his/her competitors in finance or business management who have a less detailed understanding of financial statements.

FIGURE 5
COURSE UNITS, TOPICS, DEPTH OF COVERAGE AND PERCENTAGE OF GRADE

	<i>Curriculum Priority</i>	<i>Learning Activities</i>	<i>Grade Percentage</i>
I. Disclosure of Key Accounting Policies			
Revenue recognition	Be familiar with	Multiple-choice quiz	8
Contingent liabilities	Be familiar with	Multiple-choice quiz	8
Bonds payable	Be familiar with	Multiple-choice quiz	8
Accounting Changes	Be familiar with	Multiple-choice quiz	8
			32
II. Key Ratios: Owners' Equity and Cash Flows			
Owners' Equity	Enduring understanding	Problems and Cases	28
Cash Flows	Be familiar with	Multiple-choice quiz	8
			36
III. Analysis of difficult accounts			
Taxes	Know and do	Problems and Cases	16
Investments	Know and do	Problems and Cases	16
			32

Determine Acceptable Evidence

Recall that our course objective was for students to understand the role of the accountant as a preparer of financial statements used by investors to make investment decisions. In the words of a former dean who was an assessment expert, "assessment should ask questions that we would be embarrassed if our students failed to answer correctly." This is a variant of the "fatal flaw" policy of assessment developed by Kathryn Martel, currently Dean of College of Business, Central Washington University (DeMoranville 2010).

The following case can be applied to any large public company (e.g. Apple). It hits all the units and topics of the course, with a view of assessing if students met the desired results of the course objective. The assessment can be administered both before and after the course. Students receive an excerpted version of the company's most recent 10-K. The professor asks students to highlight and refer to specific pages in the annual report in providing their answers. In the pre-assessment and possibly in the post-assessment, students might be allowed to work in teams.

I. Disclosure of Key Accounting Policies

- Revenue recognition (Spiceland et al, Ch.5)
 - Identify the revenue line on the income statement.
 - *This may seem too basic for Intermediate 2, but many instructors will attest that students often "lose the forest for the trees."*
 - Identify footnotes related to revenue recognition (e.g. accounting policies for product returns, products in shipment to customer).
- Contingent liabilities (Ch.13)
 - Identify recognized contingencies on the income statement and balance sheet (e.g. warranty expense and liability).
 - Identify footnote disclosures of recognized contingencies.
 - Identify footnote disclosures of unrecognized contingencies (e.g. lawsuits and amount of disclosed potential losses).
- Bonds Payable (ch.14)
 - Identify the liability related to Bonds Payable on the balance sheet.
 - Identify the related income statement account (e.g. interest expense).

- Identify interest paid on the statement of cash flows; explain the difference between interest expense and interest paid.
 - Identify a key ratio: “Fixed Charges to Earnings.”
 - How and why has this ratio changed in recent years?
 - Accounting changes (ch.20)
 - How does the company plan to implement the new revenue recognition standards?
- II. Perform key ratios relating to Owners' Equity and Cash Flows
- Owners' Equity (Ch18; and the related construct of market value)
 - Calculate Price/Earnings and Earnings/Price ratios for the last two recent years (calculate by using stock prices disclosed in footnotes and management discussion & analysis).
 - Calculate Return on Equity for last two years (use average owners' equity; use “selected financial data” section of the 10-K to find historical balance sheet data for the last five years).
 - Calculate dividend payout ratio for last two years.
 - Calculate cash returned to shareholders (dividends paid and shares repurchased) for last two years.
 - Cash flows (Ch21)
 - Calculate free cash flow (operating cash flow less capital expenditures) for last two years.
 - What percentage of free cash flow was returned to shareholders in each of the last two years?
 - Indicate the percentage differences between *free cash flow* relative to *net income* and *comprehensive income* for each of the past two years.
 - Which of the three measures do you think best measures overall business performance?
- III. Analysis of difficult accounts (taxes and investments)
- Taxes (Chapter 16)
 - Identify income taxes paid in cash in most recent year.
 - Identify income taxes expense for most recent year.
 - Calculate income tax expense rate based on the information in the income statement.
 - Calculate income taxes paid as a percentage of free cash flow.
 - Find the footnote disclosure indicating the company's effective tax rate.
 - How does that compare to the disclosed statutory tax rate?
 - Identify the disclosure on “permanently reinvested earnings overseas” (PRE; also known as “un-repatriated foreign earnings”).
 - Do the footnotes indicate a recognized deferred tax liability for PRE?
 - Calculate this amount as a percentage of (a) assets, (b) equity, (c) retained earnings.
 - Do the footnotes indicate an unrecognized deferred tax liability for PRE? (i.e. what the company? If yes,
 - Calculate this amount as a percentage of (a) assets, (b) equity, (c) retained earnings.
 - What would net income be if the company repatriated its entire unrecognized - PRE in a single year?
 - Investments (Chapter 12)
 - Identify long-term investments on the balance sheet.
 - Identify accounts that relate to long-term investments that appear on the (a) income statement (e.g. interest revenue, gains, equity income), (b) statement of comprehensive income (unrealized gains), and (c) statement of cash flows (operating and investing sections).

CONCLUSION

This essay outlines a Backward Design approach to a course in Intermediate Financial Accounting 2. Backward Design requires the teacher to think hard about what the desired results are. These results may or may not correspond closely to the traditional contents in textbooks. After identifying the desired results, in the desired *enduring knowledge* in particular, the teacher determines the acceptable evidence for assessment. The last and final step is to plan the actual instruction. This flips the traditional model of assessment on its head. Rather than starting with the contents of coverage, we first plan the assessment, followed by course planning.

In the context of accounting, Backward Design requires an articulated teaching philosophy. In this example, the professor's goal was that students should understand how financial statements are used by investor's to analyze a company's performance; and the CPA-exam preparation goal was de-emphasized. The professor emphasized critical thinking and creativity skills, which are critical for the effective and ethical practice of accounting (Bonk & Smith 1998; Bryant, Stone & Wier 2011; Fischer 2016; Stone 2011).

This backward designed course was broken down into three units consisting of eight topics in total. The highest emphasis was assigned to owners' equity (*enduring understanding* - 28 percent), the next level of emphasis was assigned to taxes and investments (*important to know and do* - 16 percent each), and the remaining five topics were assigned relatively small weights (*familiar with* - 8 percent each). The assessment consists of student analysis of a large public U.S. company.

Future research might compare the effectiveness of such a backward designed course with a more traditional course using a common assessment measure. Any such common assessment would necessarily be biased for or against the backward designed course, since the assessment should depend on the course objectives. To demonstrate the superiority of a backward designed course, this author is in favor using a *traditional* assessment approach to compare the backward designed course with the traditional course. That is, the assessment should not be based on the one described in this paper but based on traditional teaching objectives for intermediate accounting 2. It would be heartening if these results would demonstrate that backward design is so effective that, in addition to accomplishing its own teaching objectives, it even outperforms traditionally designed course more traditional teaching objectives (i.e. proficiency on CPA questions).

In other words, one way that would surely demonstrate the superiority of a backward designed course is to *also* administer a traditional assessment of the type provided for a non-backward designed course. If the students in the backward designed course outperform in the traditional assessment, this would provide compelling evidence that backward design is effective not only in achieving the backward design objectives and assessment, but also in outperforming in a traditional assessment.

REFERENCES

- Bonk, C.J. & Smith, G.S. (1998). Alternative instructional strategies for creative and critical thinking in the accounting curriculum. *Journal of Accounting Education*, 16, (2), 261-293.
- Bryant, S., Stone, D. & Wier, B. (2011). An Exploration of Accountants, Accounting Work, and Creativity. *Behavioral Research in Accounting*, 23, (1), 45-64.
- Clinton, B.D. & Kohlmeyer, J.M. (2005). The effects of group quizzes on performance and motivation to learn: Two experiments in cooperative learning? *Journal of Accounting Education*, 23, (2), 96-116.
- DeMoranville, C. (2010). Assessment Investment: A five-point strategy helps schools overcome faculty resistance to assurance of learning programs and encourages professors to invest in the assessment process. *BizEd* (March/April), http://digitalcommons.bryant.edu/cgi/viewcontent.cgi?article=1000&context=mark_jou
- Diaz, M.C. (2016). Assembling the opinion: An active learning exercise for audit students. *Journal of Accounting Education*, 34, (March), 30-40.

- Fischer, D. (2016). My Spiritual Odyssey as an Accounting Professor. *Journal of Ethics and Entrepreneurship*, 6, (1), 5-12.
- Fyffe, S. & Lee, K. (2016). How Design Thinking Improves the Creative Process. *Insights by Stanford Business*, January 19, <http://stanford.io/1mgkHGR>
- Johnstone, K.M. & Biggs, S.F. (1998). Problem based learning: introduction, analysis, and accounting curricula implications. *Journal of Accounting Education*, 16, (3-4, September), 407-427.
- Knewston, H. (2014). Leading a Mock Trading Floor: Active-Based Learning in a Business Context. *Journal of Accounting & Finance*, 14, (6), 11-20.
- Michaelsen, L.K. & Sweet, M. (2008). The essential elements of team-based learning (chapter 1) in Michaelsen, L., Sweet, M. & Parmalee, D. *Team-Based Learning: Small Group Learning's Next Big Step, New Directions in Teaching and Learning*, 116, (Winter), 7-27 (Wiley).
- Opdecam, E. & Everaert, P. (2012). Improving Student Satisfaction in a First Year Undergraduate Accounting Course by Team Learning. *Issues in Accounting Education*, 27, (1, February), 53-82.
- Spiceland, J.D., Sepe, J, Nelson, M., & Thomas, W. (2015). *Intermediate Financial Accounting*, 8th edition, McGraw Hill.
- Stanley, T. & Marsden, S. (2012). Problem-based learning: Does accounting education need it? *Journal of Accounting Education*, 30, (3-4, September–December), 267-289.
- Stone, D. (2011). Why markets and clients need creative accountants. *TEDx*, Accessed on October 29, 2015 at youtube.com/watch?v=FsqkwS88Rhg
- Wiggins, G. & McTighe, J. (2005, 1998). *Understanding by Design*, 2nd edition, Association for Supervision and Curriculum Development.

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