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Planning for Substantive Testing at the Assertion Level: A Training Activity and Mini Case
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Abstract: This two-part educational resource was developed to enhance students’ understanding of a key aspect of the audit guidance concerning financial statement audit planning for substantive testing at the assertion level. Assuming the role of audit associates at a CPA firm, students first engage in a training activity in which they deconstruct substantive audit tasks into significant financial statement accounts, management assertions, and types of audit procedures related to each task. Then students consider inherent risk factors for a client engagement in a mini case and apply relevant accounts, management assertions, and detailed substantive audit procedures. These resources are easy to implement and require little advanced preparation, yet they provide a rich instructional resource for either new or experienced auditing faculty. Assessment results and student survey responses reveal the effectiveness of these resources in promoting students’ comprehension of the critical role of management assertions in the audit planning process.
Planning for Substantive Testing at the Assertion Level: 
A Training Activity and Mini Case

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Running Head: Planning for Substantive Testing at the Assertions Level

We thank several anonymous reviewers who provided helpful feedback used to refine these educational resources, including practitioners at PricewaterhouseCoopers LLP, Grant Thornton LLP, and accounting professors from universities unaffiliated with the authors.
PLANNING FOR SUBSTANTIVE TESTING AT THE ASSERTION LEVEL: A TRAINING ACTIVITY AND MINI CASE

ABSTRACT

This two-part educational resource was developed to enhance students’ understanding of a key aspect of the audit guidance concerning financial statement audit planning for substantive testing at the assertion level. Assuming the role of audit associates at a CPA firm, students first engage in a training activity in which they deconstruct substantive audit tasks into significant financial statement accounts, management assertions, and types of audit procedures related to each task. Then students consider inherent risk factors for a client engagement in a mini case and apply relevant accounts, management assertions, and detailed substantive audit procedures. These resources are easy to implement and require little advanced preparation, yet they provide a rich instructional resource for either new or experienced auditing faculty. Assessment results and student survey responses reveal the effectiveness of these resources in promoting students’ comprehension of the critical role of management assertions in the audit planning process.

Keywords: management assertions; inherent risk; audit planning; significant accounts; substantive testing
I. INTRODUCTION

Management is responsible for the preparation of financial statements (PCAOB 2010a) and makes *assertions* [emphasis added] about financial elements through the statements regarding the recognition, measurement, presentation, and disclosure of financial information (PCAOB 2010c). Management assertions are central to financial statement auditing because they are the focus of an auditor’s responsibility for evidence collection (PCAOB 2010c). Audit guidance from both the American Institute of Certified Public Accountants (AICPA) and the Public Company Accounting Oversight Board (PCAOB) stresses the importance of planning the financial statement audit at the assertion level (AICPA 2012a; PCAOB 2010c). Summaries of PCAOB (2017) inspection reports indicate that regulators demand improved documentation of testing and evidence gathering sufficient to support an audit opinion. This improved documentation includes identification of the relevant assertions addressed by the audit procedures (PCAOB 2015). AICPA (2016) peer review summaries also show a need for improved documentation of audit testing that clearly indicates the significant accounts and related assertions being tested. In addition, anecdotal evidence gathered from accounting program graduates and audit practitioners1 reveals that management assertions are an integral part of training programs in public accounting firms. Even as the auditing paradigm changes to accommodate big data and automation in evidence gathering and analysis, management assertions will likely continue to provide the foundation for identifying significant accounts and testing objectives (Brown-Liburd and Vasarhelyi 2015).

The educational resources presented in this paper fill a need for in-depth assertions-related practice resources that require deeper analysis than the typical supplemental materials

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1 The importance of this goal has also been emphasized in the American Accounting Association’s recent Audit Educators’ Bootcamps.
available in most auditing textbooks. An educational activity and mini case provide an opportunity for investigating the interrelationships of inherent risk, significant accounts, relevant management assertions, and substantive audit procedures. These educational resources simulate the professional auditing environment and provide a unique perspective on planning at the assertion level (“PAL”) by requiring students to demonstrate their understanding of the account-assertion-procedure relationship in a successive approach, first to individual substantive tasks in the PAL training activity, then to audit planning based on inherent risk analysis in the Mountain Vacuum Technologies (MVT) mini case. The emphasis is intentionally limited to substantive audit procedures (rather than tests of controls), allowing students to concentrate on this aspect of audit planning. Together, these educational resources provide a rich context for students to build their audit planning skill set through opportunities to apply six categories of management assertions to eight types of substantive audit procedures, while also considering several inherent risk factors in a variety of financial statement accounts. In addition, the exhibits provide a useful tool for students to compare the PCAOB and AICPA standards for management assertions and audit procedures.

The PAL training activity is presented in the context of a firm’s continuing professional education program for audit associates to enhance their ability to address current issues in financial statement auditing practice, including the consideration and documentation of assertions related to audit planning for substantive testing. The PCAOB emphasizes the importance of continuing audit training in its 2019 Inspection Preview, stating that “we observe fewer inspection findings at audit firms with an engaged leadership team that provides staff with effective tools, training, and guidance” (PCAOB 2019, 1). The MVT mini case provides a follow up opportunity to apply what was learned in the PAL training activity to a planning scenario for
a client audit engagement. Both the PAL and MVT resources require students to think sequentially about the role of significant accounts, management assertions, and audit procedures in the audit planning process, but the two parts approach the assignment from different directions. The PAL training activity begins with detailed audit tasks and requires that students analyze those tasks by breaking them down into relevant accounts, assertions, and procedures. The MVT mini case begins with an audit planning scenario and requires that students identify inherent risks, consider relevant accounts and assertions, and develop detailed audit tasks.

II. BACKGROUND INFORMATION

Sasha Zen and Dak Leeve are colleagues and second year audit associates who met last year when they started working at North Central CPAs and Business Advisors (North Central CPAs). Sasha and Dak have both been assigned as junior members of the audit engagement team for a new client, Mountain Vacuum Technologies (MVT). You will work along with Sasha and Dak as they complete a training activity as part of their firm’s continuing professional education initiative. Later, you will assist them in their work as the engagement team plans the substantive testing for the MVT financial statement audit engagement.

III. THE PAL TRAINING ACTIVITY

The Training & Professional Development Team at North Central CPAs plans continuing professional education programs to address current significant issues in auditing. Like most medium and large CPA firms, North Central CPAs provides annual training during the summer months. These training programs are specific to the various audit experience levels at the firm, and Sasha and Dak are participating in the firm’s training program for second year associates. The Training & Professional Development team has designed a training exercise labeled the

2 Names of the auditors, CPA firm, and client are fictional.
PAL activity; PAL is an acronym for Planning at the Assertion Level. In the PAL activity, Sasha and Dak are required to identify the significant accounts, relevant management assertions, and types of audit procedures for each item on a list of 25 substantive audit tasks pertaining to business processes common in many organizations.

The list of tasks in the PAL training activity includes a variety of substantive tasks (as opposed to tests of controls) including tests of details and analytical procedures. These tasks also relate to various business processes and are presented in random order so the auditors will think carefully about their responses. They will apply a sequential approach by first identifying the significant account in each task, then consider the most likely potential for misstatement (for example understatement, overstatement, or incorrect amount) which leads to selection of the management assertion, and finally choose the type of audit procedure capable of providing relevant evidence.

**Audit Concepts and Practices Required in the PAL Training Activity**

Substantive testing is a part of every financial statement audit engagement that is designed to gather evidence concerning potential misstatements in the financial statements. Substantive testing consists of tests of details of transactions, tests of details of account balances and disclosures, and analytical procedures (AICPA 2012b; PCAOB 2010c). The list of audit tasks in the PAL training activity includes various examples from each of these three types of substantive procedures. North Central CPAs defines substantive audit *tasks* as an abbreviated form of a substantive test; the tasks are abbreviated because they describe the nature of the test but do not provide details about the timing of the procedure or the extent of testing applied.

Auditors typically organize financial statement audits according to the client company’s business processes. While businesses of different sizes that operate in different industries may
have markedly different characteristics, they tend to have basic types of business processes in common. Following are widely recognized business processes:

- Revenues and collections
- Purchasing and disbursements
- Payroll and human resource management
- Conversion and inventory management
- Financing and investing

The list of audit tasks in the PAL training activity include items from each of these business processes, presented in random order. The auditors may find it helpful to consider the relevant business process as a basis for determining relevant accounts, assertions, and procedures.

Both the AICPA and the PCAOB provide lists with explanations of management assertions that auditors can use in their audit planning (see Exhibit 1, Panels A and B, respectively). The PCAOB provides audit guidance and regulation for public companies; the AICPA provides audit guidance through the Accounting Standards Board for nonpublic companies. Since Sasha and Dak work exclusively on public company audit engagements (including MVT, the company introduced in the second part of this assignment), the PCAOB assertions and definitions (provided in Panel A of Exhibit 1) are recommended for reference in identifying assertions for the PAL activity. In applying these assertions and definitions, North Central CPAs has expanded the PCAOB list of management assertions to include the cutoff assertion. Rather than embedding cutoff within the occurrence and/or completeness assertions (as per the PCAOB guidance), North Central CPAs emphasizes the importance of evaluating the timing of transactions by separately including the cutoff assertion in its firm audit planning approach. The cutoff assertion addresses the proper recording of transactions in the period when they actually occurred, as well as the proper omission of transactions that did not take place during the current period.
Significant accounts are those accounts within the financial statements that are most at risk of material misstatement, and the risk of material misstatement provides context for the most likely type of management assertion to be tested during the audit. Auditors consider the most likely cause of a potential misstatement when developing their audit approach for significant accounts. For accounts at risk of overstatement, the existence assertion is emphasized, while accounts at risk of understatement highlight the need to test the completeness assertion. For instance, Sales is often a significant account. Sales revenue accounts are often misstated due to management’s incentive to overstate the amount of sales revenue reported in the income statement to achieve individual or company objectives. Since sales revenue is often at risk of being overstated, auditors will conduct substantive testing to gather evidence about the validity of the sales transactions – whether they actually occurred – thus indicating that the occurrence assertion is relevant for the sales revenue account.

After identifying the significant account and relevant assertion for the list of tasks, auditors gather evidence that supports and corroborates or contradicts management assertions (PCAOB 2010c). Auditors select the type of audit procedures capable of providing sufficient appropriate evidence that is both relevant and reliable, as required by auditing standards (AICPA 2017b; PCAOB 2010c). Sufficient refers to the amount of evidence, while appropriate refers to the ability of the evidence to support the related assertion. Much like the presentation of management assertions, the PCAOB and AICPA each provide guidance on audit evidence that includes lists and definitions of the various types of audit procedures, as provided in Exhibit 2, Panels A and B, respectively. North Central CPAs audit planning approach requires that any
inspection procedures be distinctly differentiated between Inspection of Documents/Records and Inspection of Assets.

[Insert Exhibit 2 here]

PAL Training Activity Requirements

Perform the following for each item on the list of 25 substantive audit tasks in the PAL training activity presented in Exhibit 3. Your instructor may provide an Excel worksheet to help you organize your answers; the worksheet presents the options for parts (b) and (c) of the assignment.

(a) Identify the significant account(s) implied or referenced in each task, calling upon your knowledge of financial statement accounts or referring to a chart of accounts or financial statements from your accounting textbooks as a source of accounts to consider.

(b) Identify the relevant management assertion(s) for the significant account(s) you identified. As a source of assertions to consider, refer to the PCAOB list of assertions in Exhibit 1, plus the cutoff assertion as used by North Central CPAs.

(c) Select the type of audit procedure that is appropriate for providing evidence related to the account and assertion. As a source of audit procedures to consider, refer to the PCAOB list of audit procedures in Exhibit 2.

Note: While multiple accounts, management assertions and/or types of procedures may be considered relevant for some tasks, try to approach each task with intent to differentiate the assertions as they apply to significant accounts and their most likely cause of misstatement. Then, select the type of audit procedure capable of producing audit evidence related to the account-assertion relationship you have identified.

[Insert Exhibit 3 here]

IV. THE MVT MINI CASE
One month after their annual training program, Sasha and Dak meet again during audit fieldwork. They are pleased to both be assigned to the engagement team for North Central CPAs financial statement audit of Mountain Vacuum Technologies (MVT). Sasha and Dak want to be well-prepared to be part of the team responsible for planning the substantive testing for this audit engagement. They begin by reviewing available information about MVT that was gathered during the engagement acceptance and preliminary audit planning phases of the audit. At this point, the overall planned level of inherent risk has been assessed as medium to high due to several factors associated with MVT’s industry and the nature of the entity, including its objectives, strategies, accounting policies, and performance measures. On the other hand, planned control risk has been assessed as low, as internal controls appear to be well designed to detect and prevent material misstatements. Planning and performing tests of controls is the responsibility of other members of the engagement team. Sasha and Dak have been assigned to the part of the audit team responsible for planning the substantive testing for significant accounts identified as having a heightened risk of misstatement due to inherent risks. Inherent risk is discussed further in the next section.

The objective at this point of the audit planning phase is to identify specific risks that could result in materially misstated financial statements. Once risks of material misstatement are identified for the MVT engagement, Sasha and Dak will work closely with the audit seniors and managers on their team to identify and document the significant accounts and management assertions related to the risks identified. Finally, Sasha and Dak will assist in the development of the substantive testing audit plan by selecting audit procedures and developing specific audit tasks that can provide sufficient, appropriate audit evidence relative to MVT’s assertions about accounts at risk of misstatement.
Audit Concepts and Practices for the MVT Mini Case

In addition to the audit concepts and practices presented as part of the PAL training activity, the MVT mini case is concerned with an auditor’s risk assessment procedures as part of the audit planning process. Assessing the risk of material misstatement in a financial statement audit is the foundation of the audit planning process. The risk of material misstatement is the product of inherent and control of risk. Inherent risk reflects the risk of material misstatement of the financial statements as a whole and of individual accounts before the consideration of control risk (PCAOB 2010b). The following five categories of inherent risk factors are provided by the PCAOB (2010d):

- Risks Related to Industry and Factors External to the Entity
- Risks Related to the Nature of the Entity
- Risks Related to Disclosures and Accounting Policies
- Risks Related to the Entity’s Objectives and Strategies
- Risks Related to the Entity’s Performance Measures

Some inherent risks are entity level risks that affect the financial statements as a whole, impacting many assertions and accounts. For example, if a company’s profitability is in decline and stakeholders are pressuring the company for improvements, there is inherent risk at the entity level due to the pressure to show improvements in revenues, expenses, and many other reported accounts. As another example, a company that operates partially in a foreign jurisdiction may have inherent risks at the entity level caused by its foreign currency translation adjustments being determined by an outside firm.

Other inherent risks affect specific accounts in the financial statements and are referred to as risks at the assertion level. For example, a mining company may have incentive to understate its less successful mineral reserve explorations to avoid losing investors. This could lead to an
overstatement of the amount of reserves available, a risk that affects the inventory of minerals account related to the existence assertion.

**Synopsis of Information Available about Mountain Vacuum Technologies (MVT)**

MVT is a midsize publicly traded industrial company that has been in operation for over ten years. This is the first year that North Central CPAs has been engaged to audit MVT. Communication with the predecessor auditor revealed that the MVT audit engagement was discontinued by the predecessor firm as part of its effort to reorganize its client portfolio to meet an objective of more concentrated specialization in other industries. MVT manufactures commercial vacuum systems capable of absorbing large quantities of both loose materials and liquids, providing containment of hazardous substances during the vacuuming process. MVT also purchases new tank trucks and modifies them with large vacuum systems to create mobile vacuum units. These trucks can be moved to various locations as needed for industrial cleanup such as the collection and containment of excess waste materials and liquid spills, as well as for remediation of accidents and natural disasters like floods and hurricanes.

The preliminary planning documentation that North Central CPAs has compiled for the new MVT engagement includes historical financial statements prepared for both internal and external reporting, public information including company filings, and a series of questionnaires prepared by the audit managers during the client acceptance process to collect information about the company and its environment. This information indicates that the company has experienced remarkable sales growth in recent years, which is attributable to first time sales of vacuum trucks to new industrial and emergency services clients. While the industrial customer base continues to grow, the emergency services sector is somewhat dependent upon the much less predictable occurrence of natural disasters and accidental chemical spills. Due to anticipated supplier
backlogs, MVT has purchased a large inventory of tank trucks that it expects will be sufficient to meet customer demand for the next 12 to 18 months, based on the prior year’s sales levels. This inventory of tank trucks can be fitted with standard or custom designed vacuum units to meet customer specifications.

Sasha and Dak’s research shows that MVT operates in a profitable and dynamic industry, with new companies entering the market each year. In addition to sales of commercial vacuum units and tank trucks, the industry offers opportunities for servicing and aftermarket sales to buyers of vacuum units. MVT currently subcontracts its warranty repair and support services through an affiliated company. Estimates of warranty and support service costs are recorded based on information provided by the subcontractor. Despite the potential in the industry, MVT’s stock price has fallen 12 percent since its initial public offering five years ago, with the largest annual decline occurring during the current fiscal year. Management attributes the decline to an overall drop in stock market prices during recent months, coupled with the company’s inability to grow sales at the tremendous pace it had experienced in the past. Profitability ratios such as gross profit percentage and net profit percentage have declined over the last two years. MVT is feeling pressure to cap the growth in selling, general, and administrative expenses, despite the need to maintain or increase marketing and promotion efforts. Among the expenses that have grown recently is warranty expense, as the company offers an enhanced warranty to attract new customers without lowering the unit prices of its products.

While reviewing the MVT documentation, Sasha and Dak also learn that MVT recently started offering extended credit terms to customers and relaxed its credit evaluation standards. As a result, the collectability of amounts due from customers appears to be declining, as evidenced by an increasing collection period. In addition, MVT has excess capacity in its production
capabilities based on current year sales projections and has committed to investment in research and development to upgrade its products. The company has recently acquired a similar size industry competitor to leverage cost savings and economies of scale, and to expand its customer base. The acquisition was financed with cash and long-term debt. The long-term debt agreement includes restrictive covenants related to liquidity ratios and limitations on the assumption of additional debt. MVT is eager to convince stakeholders that the acquisition was a smart business move.

**MVT Case Requirements**

Address the following requirements to identify inherent risk factors and account for those risks as part of the substantive audit testing plan. Your instructor may provide an Excel worksheet to record your answers; the worksheet presents some of the options for use in parts (b), (c), and (d) of the assignment.

(a) Based on the facts of the case, identify at least ten inherent risk factors that should be considered during the planning phase of the MVT audit. You may wish to analyze and organize your responses according to the five categories of inherent risk factors suggested by the PCAOB and listed on page 10.

(b) For each inherent risk factor identified in part (a), indicate if it is an **entity level risk** that potentially affects the financial statement as a whole, or **risk at the assertion level** that could lead to misstatement of a specific account on the financial statements.

(c) For each inherent risk factor identified in part (b) as **presenting risk at the assertion level**, identify a significant financial statement account at risk of material misstatement, and a relevant management assertion for the risk and account identified. As a source of assertions
to consider, refer to the PCAOB list of assertions in Exhibit 1, plus the cutoff assertion as used by North Central CPAs.

(d) For each of the accounts and assertions identified in part (c), describe a specific substantive task employing an audit procedure that could be performed by the North Central CPAs audit team. You may wish to first select a type of audit procedure from those provided in the PCAOB guidance in Exhibit 2 Panel A, then elaborate on the nature of an audit task that would be appropriate.

Note: While multiple accounts, management assertions and/or procedures may be considered relevant for some risk factors, try to differentiate them and limit your selection to the one, or at most two, accounts, assertions, and procedures that best address the risks you identified. See the example below to help you formulate your responses.

**Example of an Inherent Risk at the Assertion Level, with Significant Accounts, Relevant Assertion, and a Specific Substantive Task:**

(a) Inherent Risk: a pharmaceutical company faces inherent risk because consumer liability complaints are common for the class of drugs it sells, and companies in the industry try to avoid disclosing customer lawsuits.

(b) Type of Inherent Risk: assertion level, since the risk factor is limited to a few significant accounts and assertions.

(c) Significant Accounts: Estimated Loss from Customer Litigation, Liability for Litigation; Relevant Assertion: Completeness, since the understatment of these accounts is the most likely type of misstatement.
(d) Substantive Task: An inspection of documents in which minutes of Board of Directors meetings are reviewed for evidence of pending customer liability lawsuits not reflected in the financial statements.

V. CASE LEARNING OBJECTIVES AND IMPLEMENTATION GUIDANCE

Learning Objectives

1. Synthesize information regarding significant financial statement accounts, management assertions, and audit procedures.

2. Demonstrate how substantive audit tasks fit into a broader substantive testing plan.

3. Match accounts at risk of material misstatement with relevant assertions.

4. Select appropriate types of audit procedures to provide sufficient appropriate evidence to support management’s assertions.

5. Identify inherent risk factors in a realistic fact pattern.

Implementation Guidance

The PAL training activity and MVT mini case are suitable for students in undergraduate auditing courses, as well as in graduate courses where most students have not had prior auditing coursework. The training activity and mini case may also be useful in graduate level and advanced auditing courses as a review or warm-up assignment.

The PAL training activity and MVT mini case are most effectively used at a point in the academic term after the audit procedures have been covered and students have been introduced to auditing of business processes, usually occurring after the midpoint of the semester. These resources, the PAL training activity in particular, provide a means to emphasize and discuss significant accounts and relevant management assertions from common business processes in an
efficient and time sensitive manner. The resources are also flexible enough to allow for implementation in a number of ways: the two parts can be used individually or in tandem; as a classroom activity or for homework; as an individual assignment or as group work; in a face-to-face (F2F) or online setting; and as a review or reinforcement activity near the end of the course in preparation for the final exam. The teaching notes provide more details about the implementation options, including options for extending the requirements. Given the extent of coverage and flexibility, these educational resources may be particularly useful to new auditing instructors who will find a rich source of information on the account-assertion-procedure relationship in the teaching notes and supplemental spreadsheets.

**Evidence of Effectiveness**

Earlier versions of this educational resource were used for several years in multiple undergraduate and graduate level auditing classes taught by the authors at two universities. The resource provided a framework for increased classroom discussion of the account-assertion-procedure relationship and the distinction between the elements of the relationship. Positive feedback from students on the effectiveness of the resource in helping them understand and apply the account-assertion-procedure relationships provided the encouragement to develop the activity and mini case, implementation guidance, and teaching notes into a publishable format to share with other auditing instructors.

The current version was used in six class sections comprising a total of 104 students; four of the sections (62 students) took the course in an entirely F2F environment and two of the sections (42 students) were a mix of F2F and online. The majority of the students (86.54 percent) were undergraduates. Students completed the PAL training activity as a homework assignment.
near the end of the semester, then a subsequent class meeting was devoted to debrief and discussion. This homework portion of the assignment was scored based on an equal weighting (4 percent) for each of the 25 tasks. The MVT mini case was completed by students individually as part of the end of course assessment, and was scored according to the rubric provided in the teaching notes. Together, these two parts of the assignment comprised 20 percent of the students’ final exam. Assessment results, student feedback, and the quality of discussion generated by these assignments provide support for their effectiveness in achieving the learning objectives. In addition, audit practitioners who reviewed these materials commented favorably on their relevance and value. Several auditing educators at institutions unaffiliated with the authors also provided reviews of the resource, and their comments and suggestions were incorporated into the current version.

In gathering statistical support for the effectiveness of these educational resources, we tracked the impact in two ways: (1) comparing student’s performance accuracy in a baseline assessment versus the PAL/MVT assessments, and (2) using an anonymous survey of student perceptions. Both student performance and student responses were generally positive. With regard to assessment results, 42 students in two course sections completed a midterm assignment requiring the selection of the relevant management assertion for each item on a list of audit procedures addressing various financial statement risks and accounts. This baseline assignment was adapted from a textbook problem addressing the same broad concepts as the PAL/MVT assignments; however, the textbook-based assignment did not provide a practical

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3 The subsequent class meetings were comprised of faculty-led debrief, followed by small group discussions where students could compare and analyze their responses. For the online sections, this occurred in a required online class meeting, with synchronous online breakout sessions created for the small group discussions.

4 Both course sections were taught by the same instructor at one university and during the same semester, when the course was delivered through a combined F2F and online format. Differences between course sections were not compared, as several students floated between sections (especially for the online class meetings).
context nor highlight the important interrelationships of financial statement accounts, audit procedures, and management assertions. While these concepts were part of students’ required reading and homework prior to the baseline assessment, the classroom instruction had been limited to overview and definition at the point of the semester when this was assigned. Students were instructed to prepare for the baseline assessment by relying upon their textbook resources and notes. The results are presented in Table 1, including data on students’ scores and skill level on the baseline assessment in comparison with the assertion-selection components of the PAL activity and MVT mini-case. Students’ scores were converted to a 100-point scale and shown as a percentage. The data show significant improvement in student performance on the PAL/MVT assignments, as indicated by increased mean scores ($t = -4.688, p = .000$) and a greater proportion of students achieving proficiency (defined as 90 percent to 100 percent accuracy scores) and competence (defined as 80 percent to 90 percent accuracy scores) after completing the PAL/MVT assignments as compared with the baseline assignment. This suggests that students benefit from the practical context and the deeper analysis of the account-procedure-assertion relationships as an extension of an auditor’s risk assessment during the audit planning process. These findings accentuate the value of skill-enhancing educational resources as opposed to more concise materials that typically supplement textbook readings.

[Insert Table 1 here]

After completing the PAL and MVT assignments, students completed an anonymous survey consisting of five questions. Students rated each question on a 5-point Likert scale ranging from 1 to 5 (1 = Strongly Disagree; 5 = Strongly Agree). Table 2 summarizes the results. The median score was 4 for each of the questions, indicating the students’ agreement with statements pertaining to their skills and understanding of significant accounts and relevant
assertions. The question that was rated the highest (Overall Mean = 4.01) was “This assignment increased my understanding of significant accounts and relevant assertions.” All means are significantly different from neutral (3), p < .05 and do not differ significantly in the F2F versus online sections, p < .05.

In addition to the five questions included in Table 2, students were asked the open-ended question: Do you have any comments you’d like to share about this assignment? Thirty-five (33.65 percent) of the students provided qualitative feedback in the form of written comments. Some students felt that the PAL activity and MVT mini-case were relatable and helped them think through a tough topic, and the online students were more emphatic that these educational resources illustrated auditing concepts better than their textbook. A few students commented that this assignment required deep thought, and many of the survey comments suggest that the assignment helped students recognize the extent of time and thought required to effectively plan an audit at the assertion level. In the words of one student, “This assignment helped me connect the dots between several topics that were spread over several chapters in the book.”

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5 Survey responses cannot be differentiated for the undergraduate versus graduate student populations due to anonymity of the survey and cross-listed class sections.
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EXHIBIT 1 Authoritative Guidance for Management Assertions

| Panel A: PCAOB Guidance on Management Assertions\(^6\) - AS 1105.11 (PCAOB 2010c) | Panel B: AICPA Guidance on Management Assertions\(^7\) - AU-C 315.A133 (AICPA 2012a) |
| Assertion | Definition | Assertion | Definition |
| --- | --- | --- | --- |
| Existence or Occurrence | Assets or liabilities of the company exist at a given date, and recorded transactions have occurred during a given period. | Occurrence | Transactions and events that have been recorded or disclosed have occurred and pertain to the entity. |
| Completeness | All transactions and accounts that should be presented in the financial statement are so included. | Completeness | All transactions and events that should have been recorded have been recorded, and all related disclosures that should have been included in the financial statements have been included. |
| Valuation or Allocation | Asset, liability, equity, revenue, and expense components have been included in the financial statements at appropriate amounts. | Accuracy | Amounts and other data relating to recorded transactions and events have been recorded appropriately, and related disclosures have been appropriately measured and described. |
| Rights and Obligations | The company holds or controls rights to the assets, and liabilities are obligations of the company at a given date. | Cutoff\(^8\) | Transactions and events have been recorded in the correct accounting period. |
| Presentation and Disclosure | The components of the financial statements are properly classified, described, and disclosed. | Classification | Transactions and events have been recorded in the proper accounts. |

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\(^6\) As an extension of the PCAOB list of assertions, North Central CPAs also includes cutoff (from the AICPA list).

\(^7\) These AICPA assertions reflect the updated guidance in accordance with the issuance of SAS No. 134 (AICPA 2019), effective for audits of financial statements ending on or after December 15, 2021.

\(^8\) The cutoff assertion may be excluded on audits when the occurrence and completeness assertions include appropriate consideration of recording transactions in the correct accounting period.
| and Allocation | adjustments have been appropriately recorded, and related disclosures have been appropriately measured and described. |
|----------------|------------------------------------------------------------------------------------------------------------------|
| Classification | Assets, liabilities, and equity interests have been recorded in the proper accounts. |
| Presentation   | Assets, liabilities, and equity interests are appropriately aggregated or disaggregated and clearly described, and related disclosures are relevant and understandable in the context of the requirements of the applicable financial reporting framework. |
## EXHIBIT 2 Authoritative Guidance for Types of Substantive Audit Procedures

### Panel A: PCAOB Guidance on Audit Procedures - AS 1105.15-.21 (PCAOB 2010c)

| Types of Audit Procedures | Definition |
|---------------------------|------------|
| Inspection\(^9\)          | Examining records or documents, whether internal or external, in paper form, electronic form, or other media, or physically examining an asset. |
| Observation               | Looking at a process or procedure being performed by others. |
| Inquiry                   | Seeking information from knowledgeable persons in financial or nonfinancial roles within or outside the company, ranging from formal written inquiries to information oral inquiries. |
| Confirmation              | Evidence obtained by the auditor from a third party in accordance with PCAOB standards. |
| Recalculation             | Checking the mathematical accuracy of documents or records, performed manually or electronically. |
| Reperformance             | Independent execution of procedures originally performed by company personnel. |
| Analytical Procedures     | Evaluation of financial information made by a study of plausible relationships among both financial and nonfinancial data, including the investigation of significant differences from expected amounts. |

### Panel B: AICPA Guidance on Audit Procedures – AU-C 500.A14-.A23 (AICPA 2012b)

| Types of Audit Procedures | Definition |
|---------------------------|------------|
| Inspection                | Examining records or documents, whether internal or external, in paper form, electronic form, or other media, or physical examination of tangible assets. |
| Observation               | Looking at a process or procedure being performed by others. |
| External Confirmation     | A direct written response to the auditor from a third party in paper form or by electronic or other medium. |
| Recalculation             | Checking the mathematical accuracy of documents or records, performed either manually or electronically. |
| Reperformance             | Independent execution of procedures originally performed by others. |
| Analytical Procedures     | Evaluation of financial information through analysis of plausible relationships among both financial and nonfinancial data, including such investigation as necessary to identify fluctuations and relationships that are inconsistent with other relevant information or that differ significantly from expected values. |
| Inquiry                   | Seeking information of knowledgeable persons, both financial and nonfinancial, within the entity or outside the entity. |

\(^9\) North Central CPAs separately recognizes the two types of Inspection: Inspection of Documents/Records and Inspection of Assets.
|   | List of Audit Tasks for the PAL Training Activity |
|---|---|
|1. | Determine that accounts receivable represent amounts owed by real customers |
|2. | Account for any changes in the capital stock and additional paid-in capital accounts |
|3. | Evaluate whether the client has properly recognized any amounts due to employees in the next fiscal period for work performed in the current fiscal period |
|4. | Make sure that the cash balance per bank shown on the bank reconciliation is verified by the bank |
|5. | Analyze the gross profit percentage with respect to previous period(s) and industry data |
|6. | Verify that the client has deeds or other proof of ownership for land and other plant assets |
|7. | Compare checks written in the weeks following the end of the fiscal period to amounts in accounts payable at period-end |
|8. | Review asset lease information and supplemental data in the financial statements |
|9. | Consider payroll costs and expenses (in total and as a percentage of sales) for this period compared to prior period(s) |
|10. | Test the sales journal and establish that sales transactions are reported in the proper period |
|11. | Compare the number of days’ sales in accounts receivable (average collection period) from this period to prior period(s) |
|12. | Obtain an aged schedule of accounts receivable from period-end and verify the aging of the balances |
|13. | Ascertained whether property and casualty insurance costs are properly apportioned between the asset and expense accounts |
|14. | Reconcile the subsidiary ledger for accounts payable to the general ledger |
|15. | Review the conditions of recent bank credit to see if accounts receivable were pledged or factored |
|16. | Evaluate whether reported values for marketable securities are based on reliable and verifiable information |
|17. | Review loan loss provisions to make sure they are reasonable and adequate |
|18. | Determine that the client has not overstated the cost or quantity of its manufacturing machines |
|19. | Review long term debt agreements and verify the related footnote disclosures |
|20. | Gather evidence to determine that dividends distributed are correctly reported |
|21. | Review the various income tax account balances for consistency with tax returns and other tax documentation |
|22. | Verify that inventory account balances have been adjusted for obsolete and slow-moving items |
|23. | Check that the depreciation expense and related accounts are properly recorded |
|24. | Send a communication to a sample of approved vendors with zero or low account balances, asking them to verify the amount they owe the client |
|25. | Ascertained whether costs and obligations for customer product warranties are reported at the appropriate amounts |
## TABLE 1 Assessment Results

| Assessment                | Percentage Scores | % Competent and Proficient |
|---------------------------|-------------------|----------------------------|
|                           | Mean n = 42       | SD                         | Median |                          |
| Baseline Assignment       | 74.29% (15.32)    | 80.00%                     | 54.76% |
| PAL Activity              | 87.33% (9.25)     | 88.00%                     | 80.95% |
| MVT Mini-Case             | 88.09% (12.90)    | 83.33%                     | 85.72% |
| Combined PAL/MVT Results  | 87.71% (10.48)    | 87.67%                     | 80.95% |
TABLE 2 Student Feedback from Post-Assignment Survey

| Questions Linked to learning objectives [LO] | Responses (1 = Strongly Disagree, 5 = Strongly Agree) |
|-------------------------------------------|------------------------------------------------------|
|                                           | F2F | Online | Overall | % Agree (4) and Strongly Agree (5) |
|                                           | Mean n = 62 | Mean n = 42 | Mean n = 104 | SD | Median |                  |
| This assignment increased my understanding of significant accounts and relevant assertions [LO1,2,3] | 3.92 | 4.14 | 4.01 | (0.70) | 4.00 | 85.57% |
| My ability to identify relevant assertions for significant accounts was improved after completing this assignment [LO1,2,3] | 3.81 | 4.07 | 3.91 | (0.83) | 4.00 | 75.96% |
| This assignment improved my ability to select an auditing procedure appropriate for significant accounts and their relevant assertions [LO1,2,4] | 3.90 | 3.91 | 3.90 | (0.78) | 4.00 | 75.96% |
| This assignment increased my knowledge of auditing procedures [LO1,2,4] | 3.98 | 3.76 | 3.89 | (0.81) | 4.00 | 76.92% |
| This assignment is a good use of time | 3.76 | 4.02 | 3.87 | (0.82) | 4.00 | 73.07% |