Taking on Too Much, Too Soon? An Exploration of Experiential Learning of Novice Auditors in an Offshoring Setting

Velina K. Popova  
Kennesaw State University

Nicole S. Wright  
James Madison University

SUMMARY: Outsourcing and offshoring have become common practice among audit firms and have introduced dynamic changes to the experiences of novice auditors. Tasks once performed by novice auditors are now performed by firm members outside the core audit team, which in turn frees up novice auditors to perform different types of tasks. We utilize a $2 \times 2$ mixed design to manipulate the task type and the order in which tasks are performed to answer questions about knowledge acquisition among novice auditors. We examine accuracy on a confirmations task and sequential learning experienced by novice auditors. Our results show that the type of experience is important to novice auditors’ performance as is the order in which these experiences occur. Based on our findings, we provide recommendations for improving novice auditors training and on the job experience in the changing environment of audits.

Keywords: experiential learning; offshoring; task type; task order; novice auditors.

I. INTRODUCTION

Traditionally lower level tasks (such as confirmations of accounts receivable) have been performed by less experienced audit team members, not only to complete the work necessary for the audit itself, but also to provide experiences for novices to build on for subsequent audits (Abdolmohammadi and Wright 1987; Prawitt 1995). However, as audit firms are continuously pressured by an expectation to lower fees, audit methodology has evolved. One such recent development is the use of outsourcing and/or offshoring in completing audit...
work. The growth of outsourcing and offshoring in accounting has influenced the types of learning experiences encountered by accounting professionals (Daugherty, Dickins, and Fennema 2012; Murphy 2014). Specifically, audit firms are pushing for lower level tasks to be performed by firm members outside the core audit team (PwC 2015). This allows the core audit team, including less experienced team members, to focus on more complex audit areas and higher level tasks (such as reviewing the work done by the offshoring team) (PwC 2015; Murphy 2014). However, auditing standards are clear about the expectations for appropriate experience by auditors performing audit work (AICPA 2002). Having auditors take on tasks too complex for them may not only affect audit quality but may also impair audit efficiency if the work requires more team hours to be corrected and subsequently re-reviewed by a supervisor. As this trend is expected to continue to grow, an empirical question arises: are offshoring and outsourcing influencing novice auditors’ ability to gain knowledge and experience on audit tasks as they have in the past?

Outsourcing is defined as one or more activities or processes that have been entrusted to a company outside the organization. Outsourcing that is carried out in another country is commonly referred to as offshoring (Mella and Pellicelli 2012).1 A vast majority of prior accounting research on offshoring focuses on the effect these practices have on accounting firms and financial statement users (e.g., Arel 2012; Dee, Lulseged, and Zhang 2015; Lyubimov, Arnold, and Sutton 2013). A smaller portion of the research focuses on possible litigation outcomes as a result of an audit failure due to offshoring procedures (Arel 2012; Lyubimov et al. 2013). Our paper differs from prior literature by examining how novice auditors learn and perform in the new environment presented by the practice of offshoring. Furthermore, as the use of offshoring may not occur for every audit, examining experiences in an offshoring setting also provides us with a unique environment where we can examine knowledge acquisition of novice auditors under different types of tasks (lower level such as tests of confirmations versus higher level such as reviewing work performed by offshored teams). This in turn can help us extend our findings beyond the specific environment of offshoring to any environment where novice auditors encounter performing tasks of differing complexity.

Research shows that most knowledge acquisition by auditors happens on the job (Bédard 1989; Power 1991; Westermann, Bedard, and Earley 2015) and that accountants have a preference for learning through experience (Sternberg and Zhang 2000). Specifically, the typical lower level tasks that novice auditors perform assist them in building an audit schema (Jonassen 1997) and, as such, should prove beneficial to them as preparation for performing higher level tasks. However, literature on learning (e.g., Renkl, Stark, Gruber, and Mandl 1998; Sweller and Cooper 1985; Tarmizi and Sweller 1988; Ward and Sweller 1990) also shows that examining a worked-out example before performing a task yourself can be beneficial in novices’ learning. We explore both these learning opportunities in our setting as they pertain to novice auditors. In some respects, junior auditors are already asked to complete more challenging tasks, for example, when an audit firm experiences turnover (Andiola, Bedard, and Westermann 2016). Given that offshoring is used to reduce audit costs (Daugherty et al. 2012) and that audit firms are under continuous pressure from clients to keep the costs of audits as low as possible,

---

1 Given that most large accounting firms choose to utilize offshore offices within their own firm networks (whether domestically or abroad), we will utilize the term “offshoring.” In those offshoring centers the staff typically receive firm-specific training. However, one should note that regardless of whether the firm offshores or outsources work, the question of audit knowledge acquisition is still present. As such, we believe our paper has applicability to firms utilizing either outsourcing or offshoring.
it is likely that audit firms will only increase the use of offshoring. As a result, we believe the scenarios where novice auditors are expected to perform higher level tasks early in their career will continue for the foreseeable future.

In this paper, we examine learning through experience in an offshoring setting by utilizing a 2 × 2 mixed design (manipulating the task type and the task order). At the first stage of the experiment, novice auditors are assigned one of two tasks: they either perform a test of accounts receivable confirmations (lower level task) or review confirmation testwork already completed by an offshore office (higher level task). At the second stage of the experiment, novices in each condition of Stage 1 are again divided into two groups to perform one of two tasks: perform a second set of confirmation tests or a review of confirmation testwork already performed. Our main dependent measure (performance) is based on the accuracy of identifying seeded errors in the confirmations. With this experiment we explore three main research questions: does initial performance vary based on the type of task? Do novice auditors who perform repetitive tasks outperform auditors who perform different tasks? Does the order in which tasks are completed influence novice auditors’ performance?

Overall our results provide evidence that novice auditors who perform a confirmation task first perform better than auditors who initially review a confirmation task that has already been completed by the offshore group. However, we find that novice auditors who perform matching tasks do not show greater accuracy when compared to auditors who perform mismatched tasks. Finally, we find no support for the idea that performing the tasks in nontraditional order (review the confirmation tests before performing the task themselves) has a detrimental effect on novice auditors’ experiential learning. Our findings are in line with the worked example literature. We find that if novice auditors are able to work with and understand an already completed example, they can gain as much experience as performing the task themselves. We believe these results, taken together, show that the type of experience is important to novice auditors’ performance, as is the order in which these experiences occur. We also show that, in our scenario, performing a higher level task (novices reviewing someone else’s work before doing the task themselves) does not appear to affect novice auditors’ accuracy in the long run.

Our study provides researchers and practitioners with one of the first looks into the type of tasks performed by novices in an offshoring audit model. While our study is designed with the effect of offshoring specifically in mind, we believe its implications can extend to other settings (such as use of data analytics) where experiential order of tasks is common. We extend prior literature by examining how type and order of audit tasks affect novice auditors’ knowledge acquisition through experience. Specifically, we examine novice auditors’ accuracy on both lower level and higher level tasks. In addition, we test sequential learning from performing either matched tasks or mismatched tasks in a two-step process. Next, we contribute to practice by discussing how firms can provide training and develop different types of interventions to meet their novice auditors’ changing roles and improve accuracy on different types of tasks. Finally, by exploring the current use of offshoring in practice we contribute evidence back to practice that shows potential areas where on-the-job learning can be continued and improved. As firms continue to evolve their audit strategies by increasing the complexity of tasks performed by less experienced auditors, understanding the impact of this change on auditor knowledge acquisition is key to ensuring that auditors are sufficiently prepared to perform audit tasks well and to lead audit teams when it comes their time to do so.
II. LITERATURE REVIEW AND RESEARCH QUESTIONS

DEVELOPMENT

Use of Offshoring

Offshoring has become a common practice in the U.S. economy (Daugherty and Dickins 2009) and is expected to continue growing in the accounting profession, with key growth drivers being the need for efficient use of technology, the ability to work around the clock, the reduction of cost, and the utilization of talent across the world (Daugherty et al. 2012). Audit firms use offshoring to delegate lower level audit tasks, such as accounts receivable confirmations, bank confirmations, and tying out of financial statements, to their offshore offices. Often novice auditors are expected to do the first level review of work performed by the offshore group (Daugherty et al. 2012), even though they themselves may never have performed the specific tasks they are asked to review from others. As this work is also expected to be reviewed by the audit senior, manager, and potentially the partner, novice auditors may not take the time to understand the audit task and gain the experience they would have gained, had they actually performed the task.

Although not as common, some firms choose not to have their first-year staff involved in offshored work, and instead, have the offshored work first reviewed by the senior auditor. Another nuance of offshoring is that not all audits employ it. Therefore, it is reasonable to assume that novice auditors may experience one audit that uses offshoring and then a subsequent one that does not, meaning that auditors may find themselves having to perform the work they had reviewed in the prior audit. Ensuring that novice auditors gain the appropriate experience is important not only to ensure audit quality but also to ensure that auditors are advancing in their audit knowledge and expertise.

Learning and Development of Expertise

Expertise is determined by a number of factors such as knowledge, experience, problem-solving ability, and the type of task performed (Bonner and Lewis 1990). Knowledge can be acquired through instruction, experience, or a combination of both (Chase and Simon 1973).

One of the more heavily utilized theories that helps to explain how experience promotes learning and knowledge is the Experiential Learning Theory, the “ELT model” of Kolb (1984). The ELT model describes how knowledge is developed through a combination of gaining and transforming experience. Based on how people learn, Kolb (1984) describes people as either doers or watchers. Doers learn through experiencing the concrete and tangible qualities of the world and therefore favor active experimentation. Watchers tend to perceive new information through abstract conceptualization and therefore favor reflective observation. Generally, most knowledge gained by auditors happens on the job in a team setting, with guidance from more experienced auditors as junior auditors perform increasingly complex tasks (Davis and Solomon 1989; Bédard 1989; Power 1991).

2 To get a better understanding of the firms’ offshoring practices, we reached out to partners in the top six international accounting firms. Based on the partners we consulted, we find that about 10 percent to 20 percent of the audit work is offshored, the offshore auditors execute tasks of lower risk areas, and they are treated as any other part of the audit team. First-year staff is often utilized to review the work of offshore auditors in low risk cycles.

3 Problem-solving ability does play a role in the development of expertise. An auditor’s general problem-solving ability includes the ability to recognize financial relationships, interpret various types of data, and perform analytical reasoning (Bonner and Lewis 1990). While problem-solving ability plays a role in this particular study, we focus on the type and order of tasks. We expect that random assignment will help avoid any significant differences among groups based on problem-solving abilities.
which suggests, based on the ELT model, that accountants are doers (Sternberg and Zhang 2000). Another part of learning is described by the worked-out examples’ literature, which finds that learning from a worked-out example can be efficient and effective, especially in well-structured domains (Renkl et al. 1998, Sweller and Cooper 1985; Tarmizi and Sweller 1988; Ward and Sweller 1990; Chi, Bassok, Lewis, Reimann, and Glaser 1989).

Role of Knowledge Transfer on Subsequent Tasks

Once a person has acquired schematic knowledge in a certain area, further learning depends on the person’s ability to transfer it to subsequent tasks (Davis and Solomon 1989). Transfer usually occurs when learning has a side effect that was unexpected (Salomon and Perkins 1989). In the context of auditing, an example of an unexpected side effect is when additional audit work is required due to a confirmation having an issue. This type of side effect allows for the auditor to gain a better understanding of how the issue impacts other areas of the audit and what additional work is required to assess whether a misstatement is present.

Salomon and Perkins (1989) discuss two types of knowledge transfer between tasks—low-road transfer and high-road transfer. In general, low-road transfer happens when someone has varied practice on the same task so that knowledge transfer is almost automatic. Practice of a skill makes the performance of that skill a nearly automatic cognitive process (Bassok and Holyoak 1993). As such, we expect an easy low-road transfer of knowledge to happen when the novice auditors repeatedly perform similar types of tasks (or matching tasks). High-road knowledge transfer requires one to abstract principles deliberately from a task and apply the same principles to another task—a “mindful abstraction” (Campione, Shapiro, and Brown 1995; Salomon and Perkins 1989). We expect novice auditors who perform two different tasks at the first and second stages (i.e., a mismatch of tasks) will face a substantial learning curve at first, but possibly also display a significantly improved performance between those tasks. We also expect that within mismatched tasks, different performances could occur based on the order of those mismatched tasks. Based on the discussion above we pose three research questions:

RQ1: Will novice auditors’ initial performance be better for the review task or the performing task?

RQ2: Will novice auditors show different improvement in performance in matched versus mismatched tasks?

RQ3: In a mismatched task, does the order in which tasks are performed have an effect on novice auditors’ performance?

III. METHOD

Procedure and Participants

To answer our research questions, we utilize a $2 \times 2$ mixed-design experiment and manipulate two independent variables: (1) the type of the task that novice auditors perform (perform or review) and (2) task order. Both tasks consist of reviewing and following up on returned accounts receivable.

---

*An example of a low-road transfer of knowledge is learning to drive an automatic car and transferring that knowledge to driving another automatic car of a different make.*
TABLE 1
Participants’ Demographic Information
(n = 108)

| Variable                                | Mean (Std. Dev.) | Frequency |
|-----------------------------------------|------------------|-----------|
| Age                                     | 22.87 (2.52)     |           |
| No. times having experience with        | 1.24 (1.31)      |           |
| confirmations in class                  |                  |           |
| No. times having experience with        | 0.38 (0.88)      |           |
| confirmations at work                   |                  |           |
| Training on Confirmations               |                  |           |
| Yes                                     | 16%              |           |
| No                                      | 84%              |           |
| Type of Student                         |                  |           |
| Graduate                                | 31%              |           |
| Undergraduate                           | 69%              |           |
| Internship                              |                  |           |
| Yes                                     | 46%              |           |
| No                                      | 54%              |           |
| Gender                                  |                  |           |
| Female                                  | 53%              |           |
| Male                                    | 47%              |           |

confirmations, a common task for new staff and one currently offshored by accounting firms (Daugherty et al. 2012). The case was completed by 75 upper-class undergraduate and 33 master’s degree auditing students during their regularly scheduled audit class with one of the authors present. IRB approval was obtained prior to distributing the experiment to participants. About half of our participants had internship experience and all of them had a lecture on accounts receivable confirmations prior to case administration. Details on participant demographics are presented in Table 1.

The first stage of our experiment began with an introduction to the client and described the accounts receivable confirmation procedures decided on by the audit team. Participants were assigned at random to either perform a test of accounts receivable confirmations or to perform a review of confirmation testwork already performed by an offshore office. The participants who performed the confirmations task did so by matching the returned confirmations to the accounts receivable sub-ledger and were asked to note any differences in the confirmation log. The participants who reviewed the confirmation testwork were given the confirmation log as completed

5 We intentionally chose students about to graduate and enter the workforce because we believe they provide us an opportunity to examine what a novice auditor experiences prior to accumulating on-the-job experience or firm training. While students in the classroom are not the same as professionals on the job, we believe our participants approximated novice auditors who have limited specific firm training or audit experience. Prior research generally shows that students are considered good proxies for tasks that involve learning (Bonner and Walker 1994; Bonner, Libby, and Nelson 1997).
by the “offshore group” and a review log to document any issues or findings after reviewing the offshore group’s work. All participants received the same original returned seven confirmations and the accounts receivables sub-ledger.

The second stage followed the same order as Stage 1, with participants who performed a confirmation task being split into two groups—half performing the task set as a new engagement in Stage 2 and half reviewing the task in Stage 2. The same split was used for participants who reviewed the confirmations during Stage 1. This led to four groups sorted by task order and task type: perform/perform, perform/review, review/perform, and review/review. The experiment concluded with some demographic questions after the second stage was completed.6

**Dependent Measures**

To examine our research questions, we measured three main dependent measures—accuracy after the first task, accuracy after the second task, and an improvement score measured as the difference between accuracy on task 2 and accuracy on task 1.7 Each task for both groups contained four seeded errors out of the seven confirmations presented. The errors were not identical for the first and second stage, but they were similar enough to engage the same knowledge needed for both tasks. The seeded errors for the perform tasks were identified based on the returned confirmations, whereas the errors for the review tasks can be identified when reviewing the completed confirmation log by the “offshore group.” Accuracy points were awarded based on accurate identification of the errors. Each participant can receive up to 4 points for each task (if he/she identified all 4 seeded errors).

**IV. RESULTS**

**Impact of Task Type on Performance**

First, we examine the idea of initial performance in Stage 1 as measured by accuracy on task 1. Using an ANOVA, we find that the type of task significantly influences the accuracy on the task performed (F = 8.33, p < 0.01, Table 2, Panel B) such that the auditors who performed the confirmation test themselves had a higher accuracy of identifying the seeded errors (mean = 3.06, Table 2, Panel A) compared to auditors who reviewed the work of the offshore office (mean = 2.26, Table 2, Panel A). This result addresses our first research question (RQ1). To some extent the findings of the first research question are not surprising as generally the performance task is a one-step task, while reviewing someone else’s work is a two-step process, because it requires that participants have both an understanding of the confirmations task as well as perform a review of someone else’s work, making the reviewing arguably a more complex task.

---

6 After completing the second stage, participants were asked two manipulation questions. The questions asked if the participants performed or reviewed an accounts receivable confirmations task. About 9 percent of our participants failed both manipulation checks. During the pilot tests we found that even different versions of the manipulation questions were difficult for participants to answer correctly. Although failure rates improved with each pilot test, results indicated that achieving a little-to-no failure rate would be difficult. As such, we chose to proceed using the final version of the questions that received the best pilot results. Our results did not significantly differ when excluding participants who failed either (or both) of the manipulation check questions, so we chose to retain the full sample to preserve as many participants as possible.

7 The accuracy measures were coded by two independent coders blind to the manipulations. The interclass correlation coefficient between the two coders was 0.98 (p < 0.001).
Our second research question (RQ2) aims to obtain information on the accuracy of performance on matched tasks (review/review or perform/perform) versus mismatched tasks (review/perform or perform/review). Using an ANOVA we observe significant main effect for the Group variable ($F = 2.71, p = 0.05$, Table 3, Panel B). First, we compare the groups that performed matched tasks to those that performed a mismatched task and find no significant overall difference in accuracy ($estimate = 0.21, t = 0.44, p = 0.66$, Table 3, Panel C). This finding shows that doing a task repeatedly does not necessarily result in better performance compared to performing different tasks, thus addressing our second research question (RQ2). Next, we examine the four groups separately and find that the matched groups’ performance does not differ based on which task they were repetitively performing ($review/review mean = 2.58$ versus $perform/perform mean = 2.57, t = 0.85, p = 0.40$, Table 3, Panels A and C). On the other hand, the mismatched groups’ accuracy differed such that the review/perform group significantly outperformed ($mean = 3.14$) the perform/review group ($mean = 2.22, t = 2.81, p < 0.01$, Table 3, Panels A and C). These findings resemble some of the findings in the worked example literature. Specifically, Van Gog, Kester, and Paas (2011) find that in a study of secondary education students worked-out example followed by problem solving strategy lead to lower cognitive load and higher learning outcomes compared to problem solving followed by a worked-out example. The

---

### TABLE 2

**The Effect of Task Type on Novice Auditors’ Performance Accuracy on Task 1**

**Panel A: Means (Std. Dev.)—Performance Accuracy**

| Stage 1 Perform | Mean (Std. Dev.) |
|-----------------|------------------|
| Stage 1 Review  | 3.06 (1.31)      |
| (n = 55)        |

| Stage 1 Review  | 2.26 (1.52)      |
| (n = 53)        |

**Panel B: ANOVA Results—Performance Accuracy**

| Source          | df | SS   | Type III SS | MS   | F    | p-value |
|-----------------|----|------|-------------|------|------|---------|
| Model           | 1  | 16.75| 16.75       | 8.33 | < 0.01|         |
| Error           | 105| 211.14| 2.01        | 0.13 | 0.61 |         |
| Corrected Total | 106| 227.89|             |      |      | < 0.01 |
| Task Type in Stage 1 | 1  | 16.75| 16.75       | 8.33 | < 0.01|         |

---

a Performance Accuracy is measured as the accuracy score of Stage 1.

b All p-values are two-tailed.

---

As we are interested in the groups of matched and mismatched tasks in our research questions, we do not perform a traditional repeated measures ANOVA. In sensitivity analyses we do include the accuracy on the first task as a covariate. As expected, the accuracy on the first task significantly influences the accuracy on the second task. However, our main results related to the significance of the group variable remain the same even when including the task 1 accuracy variable as a covariate.
last finding provides further information on our last research question (RQ3). We find results that suggest that the order of tasks matters in a mismatched situation.9

Finally, to further explore the results above, we examine the difference between performance on the first task and the second task as a measure of improvement in accuracy. We find that the groups that first reviewed the offshore office’s work improved overall with the review/perform group

We analyze our research questions with ANCOVA analyses to control for possible covariates such as gender, age, experience with confirmations, class on confirmations, internship, and graduate/undergraduate student status. All our results hold across those analyses and a majority of our control variables are insignificant. The only significant covariates in some of the models are gender and graduate status where males outperformed females on certain tasks and undergraduate students outperformed graduate students. However, although significant, these covariates do not change the significance of the main variables’ effects.

### TABLE 3
A Comparison of Matched and Mismatched Order of Tasks on Novice Auditors’ Performance Accuracy on Task 2

#### Panel A: Means (Std. Dev.)—Performance Accuracya

|                      | Stage 2 Perform | Stage 2 Review | Total  |
|----------------------|-----------------|----------------|--------|
|                      |                 |                |        |
| Stage 1 Perform      | 2.57 (1.50)     | 2.22 (1.12)    | 2.40 (1.33) |
| (n = 28)             | (n = 27)        |                |        |
| Stage 1 Review       | 3.14 (1.03)     | 2.58 (1.18)    | 2.89 (1.12) |
| (n = 29)             | (n = 24)        |                |        |
| Total                | 2.86 (1.30)     | 2.39 (1.15)    |        |

#### Panel B: ANOVA Results—Performance Accuracy

| Source               | df  | SS     | Type III SS | MS  | F     | p-valueb |
|----------------------|-----|--------|-------------|-----|-------|----------|
| Model                | 3   | 12.11  | 4.04        | 2.71| 0.05  |          |
| Error                | 104 | 154.81 | 1.49        |     |       |          |
| Corrected Total      | 107 | 166.92 | 1.49        |     |       |          |
| Group                | 1   | 12.11  | 4.04        | 2.71| 0.05  |          |

#### Panel C: Contrast Results—Performance Accuracy

| Parameter                  | Estimate | Standard Error | t-value | p-value |
|----------------------------|----------|----------------|---------|---------|
| Matched versus Mismatched | 0.21     | 0.47           | 0.44    | 0.66    |
| Review/Review versus       | 0.01     | 0.34           | 0.04    | 0.97    |
| Perform/Perform            |          |                |         |         |
| Perform/Perform versus     | 0.92     | 0.32           | 2.81    | 0.01    |
| Perform/Review             |          |                |         |         |

a Performance Accuracy is measured as the accuracy score of Stage 2.
b All p-values are two-tailed.
improving the most (mean difference score = 0.97, Table 4, Panel A). The difference between the review/review and review/perform groups’ accuracy is significant (mean difference = 0.76, \( t = 2.03, p = 0.05 \), Table 4, Panel C). In contrast, the group that first performed the task actually declined in accuracy with the perform/review group declining the most (mean difference score = –0.78, Table 4, Panel A) even though not significantly different from the perform/perform group’s decline (mean difference = 0.30, \( t = 0.81, p = 0.42 \), Table 4, Panel C). This finding is interesting in light of our findings for RQ1 showing that when initial performance is measured, the group performing the confirmation test was more accurate than the group that first reviewed the work of others. A possible explanation is that when starting off with good performance, there is not much room for improvement on subsequent tasks.

We believe our results show interesting patterns. As shown in Figure 1, in the first stage, performing a confirmations task results in higher accuracy than reviewing confirmations performed by the offshored office as represented by the solid line (performing accuracy means = 3.11 and

---

**TABLE 4**

The Effect of Task Type and Task Order on Novice Auditors’ Performance Improvement

**Panel A: Means (Std. Dev.)—Performance Improvement**

|                  | Stage 2 Perform | Stage 2 Review | Total |
|------------------|-----------------|----------------|-------|
| **Stage 1 Perform** | –0.48 (1.37)    | –0.78 (1.01)   | 0.63 (1.20) |
| (n = 28)         |                 | (n = 27)       |       |
| **Stage 1 Review** | 0.97 (1.50)     | 0.21 (1.47)    | 0.62 (1.52) |
| (n = 29)         |                 | (n = 24)       |       |
| **Total**        | 0.27 (1.60)     | –0.31 (1.33)   |       |

**Panel B: ANOVA Results—Performance Improvement**

| Source         | df | SS   | Type III SS | MS   | F     | p-value |
|----------------|----|------|-------------|------|-------|---------|
| Model          | 3  | 50.66| 16.89       | 9.24 | < 0.01|
| Error          | 103| 188.33| 1.83       |      |       |         |
| Corrected Total| 106| 238.99|           |      |       | < 0.01 |

**Panel C: Contrast Results—Performance Improvement**

| Parameter                             | Estimate | Standard Error | t-value | p-value |
|---------------------------------------|----------|----------------|---------|---------|
| Review/Perform versus Review/Review   | 0.76     | 0.37           | 2.03    | 0.05    |
| Perform/Review versus Perform/Perform | 0.30     | 0.37           | 0.81    | 0.42    |

\( a \) Performance Improvement is measured as the difference between the accuracy score of task 2 minus the accuracy score of Task 1.

\( b \) All p-values are two-tailed.
3.00, reviewing accuracy means = 2.17 and 2.38). However, during the second stage of the experiment, those who first performed the task themselves experience a drop in accuracy as represented by the dotted line (perform/perform accuracy mean = 2.57 and perform/review accuracy mean = 2.22) while those who first reviewed the offshored team’s work appear to improve their accuracy on the second task (review/perform accuracy mean = 3.14 and review/review accuracy mean = 2.58).

While novice auditors perform better when they first “do” the task themselves rather than review it, their accuracy tapers off. On the other hand, reviewing someone else’s work allows for improvement from one task to the next, regardless of whether novice auditors engage in a low-road transfer (repetitive identical tasks) or a high-road transfer (mismatched tasks). It is also interesting to note that accuracy improves the most in the high-road transfer situation for the review/perform group. These findings suggest that novice auditors might benefit from (or are at least not hindered by) early exposure to higher level tasks such as reviewing others’ work.

V. CONCLUSION

Over the past decade audit firms have expanded the use of a variety of technological advances and have also benefited from globalization. Offshoring has now become part of many audits, which means that first level audit tasks are increasingly not being performed by the core audit team (Murphy 2014). This allows for the core audit team, including the less experienced team...
members, to focus on more complex audit areas and tasks (PwC 2015; Murphy 2014). Even in a more “traditional audit,” novice auditors find themselves in situations where they are called on to execute more complex tasks such as a supervising role and reviewing others’ work (Andiola et al. 2016). In this study we set out to examine how the shift in audit tasks influences novice auditors’ learning and performance on subsequent tasks. In an experiment, we examined how novice auditors’ experiential learning changed based on task type (perform confirmations tests versus review already performed confirmations tests) and the order in which they performed those tasks.

Overall our results provide evidence that novice auditors who perform a confirmation task first, perform better than auditors who initially review a confirmation test that has already been performed by the offshore group. However, we find that novice auditors who perform matching repetitive tasks do not outperform auditors who perform mismatched tasks. Finally, we find no support for the idea that performing the tasks in nontraditional order (review the confirmation tests before performing the task themselves) has a detrimental effect on novice auditors’ experiential learning. As novice auditors work to become experienced auditors and supervisors, ensuring they have the appropriate experiential learning through sequenced experiences may help prepare them to perform, and later to lead, high-quality audits. These findings, taken together, can help practitioners develop better training and consider different types of interventions when helping novice auditors’ experiential learning process in an ever-changing audit environment. Our results can aid practitioners in understanding why the approach of having novice auditors review offshored work may be beneficial as an on-the-job training tool as opposed to not involving the novice auditor in offshored work.

Our paper contributes to both academic research and accounting practice. We extend prior literature by examining how type and order of audit tasks affect novice auditors’ knowledge acquisition through experience. Specifically, we examine novice auditors’ accuracy on both lower level and higher level tasks. In addition, we test sequential learning from performing either matched tasks or mismatched tasks in a two-step process. It is interesting to observe some similarities between our findings and those of the worked examples literature. Our findings, in combination with lessons learned from education psychology, can provide audit firms with a path for better novice auditor training and on-the-job learning. Better training and learning can help firms in the changing audit environment make sure that their novice auditors are sufficiently prepared to perform audit tasks well and to lead audit teams when it comes their time to do so.

As with any behavioral research our study has several limitations. First, we used an accounts receivable confirmation task as a representative task commonly offshored by audit firms. However, we realize that the generalizability of our results to other tasks that firms choose to offshore may be limited. Although we believe our findings are applicable to other environments, such as the use of data analytics, we chose an offshoring setting because we believe it provides us with a reliable environment in which to examine our research questions. We used auditing students as proxies for novice auditors on the job. We believe students are good proxies for tasks that involve learning, but we also acknowledge that novice auditors acquire knowledge quickly on the job. We urge future research to explore how more experienced auditors learn in offshoring settings. Finally, as our experiment provided auditors with only one opportunity to experience a task, we were not able to determine whether multiple rounds of performing an entry level task, regardless of its type, would affect the results we found. The number of opportunities to perform certain tasks and its impact on auditor knowledge acquisition should be further explored. Future research can examine novice auditors’ performance over longer periods of time, as effects might taper off with more training and experience.
REFERENCES

Abdolmohammadi, M., and A. Wright. 1987. An examination of the effects of experience and task complexity on audit judgments. *The Accounting Review* 52: 1–13.

American Institute of Certified Public Accountants (AICPA). 2002. *Training and Proficiency of the Independent Auditor*. AS 1010. New York, NY: AICPA. Available at: https://pcaobus.org/Standards/Auditing/Pages/AS1010.aspx

Andiola, L., J. Bedard, and K. Westermann. 2016. *Self-Serving Bias and Affective Reactions to Audit Review*. Working paper, Virginia Commonwealth University, Bentley University, and California Polytechnic State University, San Luis Obispo.

Arel, B. 2012. The influence of judges’ attitudes on liability assessments related to failed audits exhibiting significant audit team over-time or significant use of off-shore auditors. *Advances in Accounting* 28 (2): 201–208. https://doi.org/10.1016/j.adiac.2012.06.001

Bassok, M., and K. J. Holyoak. 1993. Pragmatic knowledge and conceptual structure: Determinants of transfer between quantitative domains. In *Transfer on Trial: Intelligence, Cognition, and Instruction*, edited by D. K. Detterman and R. J. Sternberg, 68–98. Norwood, NJ: Ablex Publishing.

Bédard, J. 1989. Expertise in auditing: Myth or reality? *Accounting, Organizations and Society* 14 (1-2): 113–131. https://doi.org/10.1016/0361-3682(89)90037-8

Bonner, S., and B. Lewis. 1990. Determinants of auditor expertise. *Journal of Accounting Research* 28: 1–20. https://doi.org/10.2307/2491243

Bonner, S., and P. Walker. 1994. The effects of instruction and experience on the acquisition of auditing knowledge. *The Accounting Review* 69: 157–178.

Bonner, S. E., R. Libby, and M. W. Nelson. 1997. Audit category knowledge as a precondition to learning from experience. *Accounting, Organizations and Society* 22 (5): 387–410. https://doi.org/10.1016/S0361-3682(96)00049-9

Campione, J., A. Shapiro, and A. Brown. 1995. Forms of transfer in a community of learners: Flexible learning and understanding. In *Teaching for Transfer: Fostering Generalization of Learning*, edited by A. McKeough, J. Lupart, and A. Marini, 35–69. Mahwah, NJ: Erlbaum.

Chase, W. G., and H. A. Simon. 1973. The mind’s eye in chess. In *Visual Information Processing*, edited by W. G. Chase, 215–281. New York, NY: Academic Press.

Chi, M., M. Bassok, M. Lewis, P. Reimann, and R. Glaser. 1989. Self-explanations: How students study and use examples in learning to solve problems. *Cognitive Science* 13 (2): 145–182. https://doi.org/10.1207/s15516709cog1302_1

Daugherty, B., and D. Dickens. 2009. Offshoring the independent audit function. *The CPA Journal* 79: 60–65.

Davis, J., and I. Solomon. 1989. Experience, expertise, and expert-performance research in public accounting. *Issues in Accounting Education* 27 (3): 733–742. https://doi.org/10.2308/iaec-50141

Davies, J., and I. Solomon. 1989. Experience, expertise, and expert-performance research in public accounting. *Journal of Accounting Literature* 8: 150–164.

Dee, C., A. Lulseged, T. Zhang. 2015. Who did the audit? Audit quality and disclosures of other audit participants in PCAOB Filings. *The Accounting Review* 90 (5): 1939–1967. https://doi.org/10.2308/accr-50968

Jonassen, D. 1997. Instructional design models for well-structured and ill-structured problem-solving learning outcomes. *Educational Technology Research and Development* 45 (1): 65–94. https://doi.org/10.1007/BF02299613

Kolb, D. A. 1984. *Experiential Learning*. Upper Saddle River, NJ: Prentice Hall.

Lyubimov, A., V. Arnold, and S. Sutton. 2013. An examination of the legal liability associated with outsourcing and offshoring audit procedures. *Auditing: A Journal of Practice & Theory* 32 (2): 97–118. https://doi.org/10.2308/ajpt-50354

Mella, P., and M. Pellicelli. 2012. The strategies of outsourcing and offshoring. *American International Journal of Contemporary Research* 2: 116–127.

Murphy, M. L. 2014. *How to Prepare for Auditing in a Digital World of Big Data*. Available at: http://www.journalofaccountancy.com/news/2014/oct/201411104.html

Power, M. K. 1991. Educating accountants: Towards a critical ethnography. *Accounting, Organizations and Society* 16 (4): 333–353. https://doi.org/10.1016/0361-3682(91)90026-B

Prawitt, D. 1995. Staffing assignments for judgment-oriented audit tasks: The effects of structured audit technology. *The Accounting Review* 70: 443–465.

PricewaterhouseCoopers (PwC). 2015. *Our Focus on Audit Quality*. Available at: http://www.pwc.com/us/en/audit-assurance-services/publications/assets/pwc-2015-audit-quality-report.pdf
Renkl, A., R. Stark, H. Gruber, and H. Mandl. 1998. Learning from worked-out examples: The effects of example variability and elicited self-explanations. *Contemporary Educational Psychology* 23: 90–108. https://doi.org/10.1006/ceps.1997.0959

Salomon, G., and D. N. Perkins. 1989. Rocky roads to transfer: Rethinking mechanisms of a neglected phenomenon. *Educational Psychologist* 24 (2): 113–142. https://doi.org/10.1207/s15326985ep2402_1

Sternberg, R. J., and L. F. Zhang. 2000. *Perspectives on Cognitive, Learning, and Thinking Styles*. Mahwah, NJ: Lawrence Erlbaum.

Sweller, J., and G. Cooper. 1985. The use of worked examples as a substitute for problem solving in learning algebra. *Cognition and Instruction* 2 (1): 59–89. https://doi.org/10.1207/s1532690xci0201_3

Tarmizi, R., and J. Sweller. 1988. Guidance during mathematical problem solving. *Journal of Educational Psychology* 80 (4): 424–436. https://doi.org/10.1037/0022-0663.80.4.424

Van Gog, T., L. Kester, and F. Paas. 2011. Effects of worked examples, example–problem, and problem–example pairs on novices’ learning. *Contemporary Educational Psychology* 36 (3): 212–218. https://doi.org/10.1016/j.cedpsych.2010.10.004

Ward, M., and J. Sweller. 1990. Structuring effective worked examples. *Cognition and Instruction* 7 (1): 1–39. https://doi.org/10.1207/s1532690xci0701_1

Westermann, K. D., J. C. Bedard, and C. E. Earley. 2015. Learning the “craft” of auditing: A dynamic view of auditors’ on-the-job learning. *Contemporary Accounting Research* 32 (3): 864–896. https://doi.org/10.1111/1911-3846.12107