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CERTIFICATION STUDY COMPANION SERIES

Microsoft Power BI Data Analyst Certification Companion

Preparation for Exam PL-300

›

Jessica Jolly

Apress®

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Printed on acid-free paper

This book is dedicated to my husband who has always supported me in my endeavors.

Table of Contents

About the Author

Jessica Jolly is a Microsoft Certified Trainer (MCT) who helps businesses, nonprofits, and individuals improve their business intelligence skills, bit by byte. She runs her own business, ALT-Enter, LLC. Before her reinvention as an entrepreneur (after 50!), she worked for Unilever, a global consumer products company, for 27 years, in a variety of managerial roles. Her business practice focuses on data visualization tools, specifically Microsoft's Power BI platform. She is living proof that you could cry through every math class you ever had and still fashion a career that focuses on data, charts, visuals, and code. When she is not training other adults, she is knitting and quilting (a refuge from all of the technology!), reading about the Civil War, swimming, gardening, biking, hiking, and canoeing.

About the Technical Reviewer

Ginger Grant is a Data Platform MVP who provides consulting services in advanced analytic solutions, including machine learning, data warehousing, and Power BI. She is an author of articles and books and at DesertIsleSQL.com and uses her MCT to provide data platform training in topics such as Azure Synapse Analytics, Python, and Azure Machine Learning.

Acknowledgments

I would like to thank Ginger Grant, my technical editor, for her kindness when correcting my errors. It takes tact and empathy to tell someone they are wrong, and she has both in spades.

Introduction

I cannot honestly say that I have always wanted to write a book. What I can say is that I have relied on books written by others throughout my learning journey with Power BI. Call me “old-school,” but having the physical document available to write notes on, refer to, and reread helps me master a concept, technique, or idea. When Apress approached me with the idea of writing a book about the PL-300, I was excited and nervous. Excited because it would give me a chance to “pay it forward”—to help others who want to pass the PL-300 and, more importantly, become skilled Power BI practitioners. Nervous because I worried that I wouldn’t be able to write cogently and succinctly about all the topics covered by the PL-300.

In the process of writing, I had to research some topics further, because I realized that I didn’t fully understand them. I had to think deeply about each topic to come up with simple, clear language to explain complex elements. In other words, I had to really ensure that I understood each topic before I could write about it. This process has made me a better teacher and a better practitioner. Because teaching is my priority, I really hope that this book will reach folks who may feel intimidated by Power BI. I hope it will empower you, dear reader, to tackle the PL-300 exam. Even more importantly, I hope the book will encourage you to pick up other books written by other Power BI professionals. Apress publishes many of these titles, and they are all excellent.

Finally, let me share with you my personal mantra: #showup. Do not be afraid to take the exam; so what if you fail? Failure is integral to learning. Do not be afraid to speak at a conference; there are always folks who know less than you do and folks who know more than you do. Do not be afraid to become active in the Power BI community. We are a very welcoming, inclusive group of people who want everyone to succeed, and that includes you!

PART I

Prepare to Study

CHAPTER 1

Exam Overview

Welcome, reader. I hope that this book will be informative and helpful as you prepare for the PL-300 exam. I am a big believer in certification and want to encourage as many people as possible to get certified.

Why Certify?

The very premise of this book begs a question: Why certify? Lots of very talented professionals in the Power BI community are not, and don't feel the need to be, certified. You certainly can go this route if your "street cred" is high, that is, other professionals recognize your expertise. Building up your reputation over time is one way to accomplish professional recognition. But what if you are in a hurry? Or you don't have an extensive network to leverage? This is where a certification is valuable.

Any Microsoft certification test you take is rigorous and comprehensive—it is supposed to be! If you pass, that is a very good indicator to others (hiring managers, colleagues, your wider network) that you possess the minimum amount of expertise deemed necessary to be a competent Power BI practitioner. The PL-300 exam is what I call a "broad-spectrum" exam; it will test you on a wide range of concepts and techniques. To prepare for the exam, you need to make sure you are conversant with the full Power BI ecosystem. That's what makes the PL-300 (and the DA-100 before it) such a good indicator of your competencies and why certification is a great way to advertise them.

When Should You Take the Exam?

I take exams as part of my job; I am a Microsoft Certified Trainer (MCT) and am required to maintain active certifications to renew my MCT yearly. I was never terribly test-phobic and am certainly not now—I can't afford to be! But I recognize that lots of people are

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terrified of taking a test. In my observation, there are two types of exam takers: (1) those who want to be completely prepared and won't sit for an exam unless they are close to 100% confident in their knowledge and (2) those who take the exam as soon as they feel even slightly ready. (Full disclosure: I am firmly in the second camp.) If you are in the "completely prepared" camp, you are your own best judge of when to take the exam. But I can say don't wait for the perfect moment. No such moment exists. I can't honestly say that this book (or any study material) will *completely* prepare you for every question on the exam. There will be questions even a seasoned professional may not have encountered. Nor do I expect that you will want to take exams the way I do: on a wing and a prayer. I use exams as a gauge of how far I am from competency. Occasionally, my approach works, and I unexpectedly pass an exam. But more frequently, I fail. I have a high tolerance for failure, which is *not the same* as saying it doesn't bother me. It does. But I work at taking it in stride. I respond to passing the same way I react to failing; it's a milestone along the way. In this way, I normalize *the taking of exams*, without overvaluing either outcome. In this book though, I am trying to prepare you for a middle way: taking the exam once you are *reasonably confident* in your knowledge.

What Is Reasonably Confident?

Determining if you are reasonably confident is subjective, but there are objective measures you can use. The first, and most important, method is to follow the list provided by Microsoft that outlines each of the subject areas (also called domains). This book is organized using those domains. Don't skip any chapters because you can be sure that some material from each domain will appear on the exam. Practice the techniques described as much as possible. Read or listen to other supplementary material, particularly on topics that you don't understand. (I will provide well-reputed sources for additional content in Chapter 15.) Attend as many user group meetings as you can. Post-COVID, most of them have a virtual option, so attending is much easier than it used to be.

To assess my understanding of a topic, I describe the concept using layman's terms—no technical terms at all. If I can't "translate" the idea into "plain English," I know I am not quite there. I also perform "teach-back" to someone else. Almost anyone in the Power BI community is a likely audience for a "teach-back." If the audience is more proficient than you are, they can give you feedback on aspects where you were unclear or, worse yet, incorrect. If your audience is not as knowledgeable as you are, they can tell you which parts you explained clearly and areas where your explanation was "muddied."

Taking the Exam

Before you take the exam, there are some steps you need to take.

Signing Up

The first step to taking the exam is signing up. You do this on the Microsoft website:

https://docs.microsoft.com/en-us/learn/certifications/exams/pl-300

The retail price for the exam is 165 USD. (You might have discounts based on your workplace or other memberships.)

Once you choose "Schedule exam," you will need to create a certification profile if you haven't taken an exam before. If you have taken an exam before, you will be taken to your profile page.

You will need to provide a copy of valid identification when taking the exam. Here are the acceptable forms of ID, taken from the Pearson VUE website:

- Passport
- Driver's license
- Non–US military ID (including spouse and dependents)
- Identification card (national or local)
- Registration card (green card, permanent residence, visa)

Unacceptable forms of identification include renewal forms with expired IDs and government-issued name change documents with government IDs. If your identification is not considered valid, you will not be permitted to complete your exam, and you are unlikely to receive a refund.

Tip 1 If you are creating a profile for the first time, make sure that the name that you provide matches the name on your identification you will use to validate your identity. If it doesn't, you may be challenged during your sign-in process.

Tip 2 Use an email address you will continue to have access to even if you change employers. Use a Microsoft email address for best results: Hotmail, Outlook, or your own domain.

After creating or verifying your profile, you will then be taken to the "Exam Discounts" page. If you have received a discount code, this is where you will be able to enter it.

Now proceed to the scheduling page.

Online or at a Testing Center?

You will need to decide if you want to go into a testing center or take the test online. Here are some factors to consider:

1. Are there testing centers near you? A lot of them closed during the COVID pandemic and may not have reopened.
2. Do you have a quiet, uncluttered space in which to take the exam? If you are taking the exam at home, you cannot have people coming into the room where you are taking the exam. You also need to clear out the space around your computer so there are no books or other potential sources of information near you. The exam proctor will ask you to take a picture of all four walls of your room to make sure there is nothing that could provide any extra information. This means removing any pictures from the walls, covering all screens but the one you are working on, and closing the door to the room.
3. Do you do your best work later in the day or at night? If so, a virtual test may be the right option for you.
4. Do you have lots of distractions you cannot control at home? If so, a testing center may be a better option.
5. Does your computer have a microphone and camera attached? Both are required for an online exam.

6. Can your computer run the required software? Pearson VUE provides a test that you should run before your first online exam, to ensure you won't have any issues. If you are taking the test from a work-provided computer, make sure that you are not on the virtual private network or behind your company's firewall.

I have switched to online testing. Here are some things I have experienced or done that have worked well for me (or not!):

1. When my local library was open, I booked a conference room for two hours and took the test there. It was great because I didn't have to clear anything out. I put a handwritten sign "Do Not Disturb—Testing" on the door and then locked the door so no one could accidentally come in.
2. I took a test in my bathroom because it was the least cluttered of my rooms. I don't recommend this—it was very uncomfortable. The proctor didn't like it either as my device camera was at a strange angle because I had my laptop on my lap.
3. I have taken a test in a bedroom, with a door that I *thought* I had closed. My dogs came in and jumped up on the bed. I thought it would invalidate my test, but fortunately it didn't. (These dogs are poodles, so they are smart, but their data analysis skills are *not* renowned.)
4. I had a Dell laptop in which the camera was on the bottom of the screen. This created an awkward angle, which the proctor was not used to. She constantly asked me to adjust my camera, something that was not easy based on its position. I would recommend using a free-standing camera if you can, as it will be easy to adjust on request.
5. Proctors do not like it if you cover your mouth with your hand. Be aware of your habitual gestures because the proctor may object.
6. Proctors do not like it if you read the question to yourself, even silently. If that is a habit you have while reading, be aware of it.

7. Do not expect to have drinks or food. I have had proctors challenge my soda bottle.

These are just tidbits from my experience. **Please read the Pearson VUE website carefully, particularly if this is your first exam.**

Choosing Your Time Block

If you are scheduling an online exam, you will see a calendar with dates on which an appointment is available. (Grayed-out dates do not have available time slots.) You can choose the clock type you want to use (12-hour or 24-hour). Be sure to set the time zone where you will be when you are taking the exam.

The time you choose is the starting time for the exam. You can begin your check-in process *no earlier* than 30 minutes prior to the starting time. I recommend checking in as soon as you can—you can always start the exam a little early, but if you run into problems when checking in, you may need that entire 30 minutes.

Marking Your Calendar

Once you have successfully scheduled your exam, you will receive a confirmation email at the email address listed on your profile. (This may not be the email address you check regularly.) I forward the confirmation to my business email, where I keep my calendar. I then set up an appointment for the exam at the starting time of the exam and make a note that I can sign in up to 30 minutes early. I attach the confirmation to the appointment item. That way, I have all the relevant information I need right in the appointment entry.

You should block out two hours for the exam. The time allotted for the exam varies by exam, but two hours should be plenty for the PL-300.

Canceling or Rescheduling Your Exam

Up to 24 hours in advance, you can reschedule or cancel your exam. I have rescheduled exams several times. Each time the process worked seamlessly, until I forgot to reschedule an exam and therefore “lost” the exam. If you can’t reschedule more than 24 hours in advance, you will need to contact Pearson VUE to discuss your individual situation.

I haven't taken an onsite exam since the beginning of COVID, so I can't speak to the rescheduling or cancellation policies of an onsite testing center. **If you choose to take the test at an onsite center, be sure to read the guidance documents carefully.**

The Exam Format

Now you are prepared to take the exam. You have scheduled, you have studied, and you are ready! What can you expect? I am not allowed to give you information about the content of the exam, but I can describe the format and structure of the exam.

Case Studies: You will have at least one case study, which will describe a scenario, with the current setup, the solution requirements, and the problems/issues/constraints fully described. You will then be given a series of specific questions, and you will need to determine if the proposed solution will meet the requirements. Case study sections are self-contained. You can mark a question for review, but you will only be able to review it while you are still in the case study.

My advice for Case Studies: Take your time and read *all* the descriptive material meticulously. Then read each question carefully and go back to the descriptive material and look for wording or specific points that could affect your answer. If you are uncertain about your answer, mark it for review and come back to it after answering the other questions in the case study. Sometimes answering other questions will jog your memory, and you will be able to confidently answer the question you weren't sure about.

Drag and Stack: These questions will require you to build an answer using various options that you can drag over from a list. For example, you will need to provide three steps, in sequence, and you are provided four options from which to choose.

My advice for Drag and Stack: Eliminate the clearly incorrect answer. There will usually, but not always, be one. Then, of the remaining options, identify the one that is clearly either first or last in the sequence. You have thus minimized the options you have to choose from and thereby reduced your risk of being incorrect. Read the options carefully (have I already said this?!). There are times when *the way* an option is written will make it clear whether it is correct or not.

Fill in the Blank: These questions provide you with options to use to fill in the blank (or multiple blanks) in an answer. Unlike Drag and Stack, you can use an option more than once or not at all.

My advice for Fill in the Blank: Look for the parts of the answer about which you are confident and fill in that blank. Then look at the other options and eliminate anything that is clearly wrong. After that, it is something of a guess. I do mark these questions for review because after finishing all the questions, I feel more confident in some of my answers.

Problem/Solution: These questions pose a particular problem and then provide a proposed solution. You are then asked if the proposed solution will solve the stated problem.

My advice for Problem/Solution: Read the problem statement carefully. (I know I am repeating myself, but I cannot overemphasize this enough. Sometimes there is a clue in the wording of the problem.) As you review the proposed solution, remember that there *can* be multiple solutions to a problem. Just because you marked a previous answer as a solution does not mean the next question is *not* a solution. Don't try to outwit the exam algorithm—there is not a predetermined set of solutions that always obtains. Read each proposed solution at face value.

General Tips for Exam Taking

I am someone who has never had exam phobia, so maybe I am exactly the wrong person to give you any tips. For what they are worth, here they are:

1. Don't be afraid to fail. Failing a test *does not mean you are a failure*. Rather, it is a gauge that tells you that more study is needed. As I said earlier, I have failed plenty of exams!

2. Get a good night's sleep. You are taking an exam, not facing a judge and jury.

3. Do not eat or drink anything unusual the night before your exam. You can step away for an unscheduled break, but this is a recent development, so I can't give you any specifics.

4. Breathe. Again, it seems obvious, but what I really mean is pay attention to your breath. Don't hold your breath or take shallow breaths. These breath patterns can increase your anxiety.

5. Wear comfortable clothing and make sure the room temperature is comfortable for sitting in one place for over an hour. Again, you won't be able to get up and put on a sweater or take off a garment.

6. Plan to keep your face in the camera's view and your hands resting on the table/desk or lap when you aren't using your mouse/touchpad. Proctors do not like it when you cover your mouth in any way.
7. Manage your exam clock. Don't spend too much time on one question. If I can't answer the question completely or confidently within two minutes, I answer to my best ability and then mark it for review. I rarely leave an answer completely blank. You would be surprised how much your nerves have settled toward the end of the exam. You can look at questions you weren't sure of and answer them confidently when you are reviewing them.
8. Read carefully. Yes, I am saying it again. I have passed exams for which I really didn't know the material very well. But because I read each question and answer carefully *and* I guessed very judiciously, I passed the exam. I don't recommend this as a surefire way to pass an exam, but it certainly helps.
9. Handle failure and passing with the same amount of reaction—don't overly celebrate a pass or overly accentuate a failure. Neither is anything other than a gauge of your knowledge. *There's always more to learn*.

You've Passed. Now What?

You will find out immediately whether you passed. Each Microsoft certification has a "badge" with an icon. I search for the badge icon, capture it (or get it in a .png format), and put it into a folder I keep for certification icons. I then add it to my email signature, my LinkedIn profile, and my website.

If an employer needs proof that you have passed the exam, you can share your transcript with them. You will have an MCID (once you've filled out your profile), and you will have a transcript code. You can provide your MCID and transcript code to any employer interested in your certifications.