



AI-Assisted Power BI for Business Analytics

Figure 1: AI-Assisted Power BI for Business Analytics

Prompting Journal

AI-Assisted Power BI for Business Analytics

Student Name: [Your Name] **Course:** Advanced Business Analytics - Virginia Tech MBA **Weight:** 15% of Final Grade

Purpose

This journal develops your **metacognitive awareness** of AI interaction. By documenting what works, what fails, and why, you build a personal “prompt library” that accelerates your future analytics work.

“The best prompt engineers aren’t born - they iterate, document, and learn.”

```
%%{init: {'theme':'base', 'themeVariables': {'primaryColor': '#e8f4fd', 'secondaryColor': '#e8f6ea', 'tertiaryColor': '#e8f6ea'}}}
flowchart LR
```

```
  A[" Prompt"] --> B{" Result?"}
  B -->|" Success"| C[" Document Pattern"]
  B -->|" Fail"| D[" Analyze Why"]
  D --> E[" Refine Prompt"]
  E --> A
  C --> F[" Prompt Library"]
```

```
style A fill:#e7f5ff,stroke:#74c0fc
style C fill:#d3f9d8,stroke:#69db7c
style D fill:#fff5f5,stroke:#ffc9c9
style F fill:#fff3bf,stroke:#ffd43b
```

The prompt engineering cycle: try → evaluate → learn → document

Weekly Structure

Each module, complete one journal entry with:

Section	What to Include
3 Prompts That Worked	Successful prompts with outcomes
1 Prompt That Failed	What went wrong and how you recovered
Key Learning	Pattern or insight about effective prompting
Prompt Library Addition	Reusable prompt pattern to save

Journal Entries

Module 1: The AI-Powered Analytics Landscape

Date: _____

3 Prompts That Worked Prompt 1:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 2:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 3:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

1 Prompt That Failed Failed Prompt:

[Write your exact prompt here]

What went wrong: [Describe the issue] **How I recovered:** [What did you try instead?] **Lesson learned:** [What would you do differently?]

Key Learning *What did you discover about effective prompting this week?*

[Your reflection - 2-3 sentences]

Prompt Library Addition Pattern Name: [Give it a memorable name] **Use Case:** [When to use this pattern] **Template:**

[Reusable prompt template with [placeholders]]

Module 2: Creating Reports with Copilot

Date: _____

3 Prompts That Worked Prompt 1:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 2:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 3:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

1 Prompt That Failed Failed Prompt:

[Write your exact prompt here]

What went wrong: [Describe the issue] **How I recovered:** [What did you try instead?] **Lesson learned:** [What would you do differently?]

Key Learning [Your reflection - 2-3 sentences]

Prompt Library Addition **Pattern Name:** [Give it a memorable name] **Use Case:** [When to use this pattern] **Template:**

[Reusable prompt template with [placeholders]]

Module 3: Discovering Insights with AI Visuals

Date: _____

3 Prompts That Worked Prompt 1:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 2:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 3:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

1 Prompt That Failed Failed Prompt:

[Write your exact prompt here]

What went wrong: [Describe the issue] **How I recovered:** [What did you try instead?] **Lesson learned:** [What would you do differently?]

Key Learning [Your reflection - 2-3 sentences]

Prompt Library Addition **Pattern Name:** [Give it a memorable name] **Use Case:** [When to use this pattern] **Template:**

[Reusable prompt template with [placeholders]]

Module 4: Data Foundations for AI Success

Date: _____

3 Prompts That Worked Prompt 1:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 2:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 3:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

1 Prompt That Failed Failed Prompt:

[Write your exact prompt here]

What went wrong: [Describe the issue] **How I recovered:** [What did you try instead?] **Lesson learned:** [What would you do differently?]

Key Learning [Your reflection - 2-3 sentences]

Prompt Library Addition Pattern Name: [Give it a memorable name] **Use Case:** [When to use this pattern] **Template:**

[Reusable prompt template with [placeholders]]

Module 5: Visualization Design & Storytelling

Date: _____

3 Prompts That Worked Prompt 1:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 2:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 3:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

1 Prompt That Failed Failed Prompt:

[Write your exact prompt here]

What went wrong: [Describe the issue] **How I recovered:** [What did you try instead?] **Lesson learned:** [What would you do differently?]

Key Learning [Your reflection - 2-3 sentences]

Prompt Library Addition Pattern Name: [Give it a memorable name] **Use Case:** [When to use this pattern] **Template:**

[Reusable prompt template with [placeholders]]

Module 6: Sharing, Collaboration & Governance

Date: _____

3 Prompts That Worked Prompt 1:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 2:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

Prompt 3:

[Write your exact prompt here]

What Copilot returned: [Brief description] **Why it worked:** [Your analysis]

1 Prompt That Failed Failed Prompt:

[Write your exact prompt here]

What went wrong: [Describe the issue] **How I recovered:** [What did you try instead?] **Lesson learned:** [What would you do differently?]

Key Learning [Your reflection - 2-3 sentences]

Prompt Library Addition Pattern Name: [Give it a memorable name] **Use Case:** [When to use this pattern] **Template:**

[Reusable prompt template with [placeholders]]

Final Reflection

Complete after Module 7

My Prompting Evolution

How has my prompting approach changed from Module 1 to Module 6?

[Your reflection - 3-4 sentences]

Top 5 Prompt Patterns

Your most valuable, reusable prompts from the course:

#	Pattern Name	Use Case
1		
2		
3		
4		
5		

When AI Excels vs. Struggles

Copilot is great at: 1. 2. 3.

Copilot struggles with: 1. 2. 3.

The human role that remains essential:

[Your reflection]

Career Application

How will I use AI-assisted analytics in my career?

[Your reflection - 3-4 sentences]

Prompt Pattern Library (Reference)

Report Creation Patterns

"Create a report about [topic] showing [metric1], [metric2], and [metric3]"

"Create a [audience]-friendly dashboard for [purpose]"

"Build a report that answers: [business question]"

Refinement Patterns

"Add a page focused on [specific area]"

"Change [visual] to show [different aggregation/dimension]"

"Make this more [executive/detailed/visual/data-dense]"

Comparison Patterns

"Compare [period A] to [period B]"

"Show [metric] by [dimension] vs [another dimension]"

"Highlight the difference between [segment A] and [segment B]"

Insight Discovery Patterns

"What factors influence [outcome]?"

"Why did [metric] change in [time period]?"

"What are the key insights about [topic]?"

Summarization Patterns

"Summarize this report in 3 bullet points"

"What are the most important trends?"

"Explain this data to a non-technical executive"

Grading Criteria

Criterion	Weight	Excellent	Adequate	Needs Work
Completeness	30%	All 6 entries complete with detail	Most entries complete	Missing entries or lacking detail
Reflection Quality	30%	Deep insights, specific examples	Good observations	Surface-level or generic
Prompt Documentation	20%	Exact prompts with clear analysis	Prompts included, some analysis	Vague or missing prompts
Library Building	20%	Useful, reusable patterns	Some patterns documented	No library development

Tips for a Great Journal

Be Specific

"I asked about revenue and it worked" "I asked 'Show me revenue by region for Q4 2024' and got a bar chart comparing 10 regions. It worked because I specified the time period and dimension."

Capture Failures Honestly

Failures are learning opportunities. Document what went wrong and why - this is often more valuable than successes.

Build Reusable Patterns

Don't just document one-time prompts. Extract patterns you can use again:

- One-time: "Show me Azure revenue by quarter"
- Pattern: "Show me [product] [metric] by [time period]"

Reflect on the "Why"

Don't just record what happened. Think about *why* certain prompts work better than others. What patterns do you notice?

"Your prompting journal is a record of your growth. Six months from now, you'll be amazed at how far you've come."