

SYNTHESIS PRACTICE WORKSHEET

Master the art of synthesizing multiple sources for your literature review and research paper. This worksheet transforms you from source summarizer to synthesis expert.

☐ UNDERSTANDING SYNTHESIS

What is Synthesis?

Synthesis = Combining ideas from multiple sources to create NEW understanding and show relationships between research findings.

Summary = Describing what ONE source says.

The Key Difference

☐ **SUMMARY (Wrong Approach):** “Smith (2023) found that social media increases anxiety. Jones (2022) also found that social media affects mental health. Brown (2021) studied teenagers and social media.”

☐ **SYNTHESIS (Correct Approach):** “Recent research consistently demonstrates that social media negatively impacts adolescent mental health, with studies identifying three primary mechanisms: sleep disruption (Smith, 2023; Jones, 2022), social comparison (Brown, 2021; Davis, 2023), and reduced face-to-face interaction (Wilson, 2022). However, the magnitude of these effects varies significantly based on usage patterns (Chen, 2023).”

Notice the Difference: - ☐ Multiple sources discussed together - ☐ Patterns and relationships identified - ☐ Your analytical voice leads - ☐ Sources support your analysis - ☐ Nuances and contradictions noted

☐ SYNTHESIS DIFFICULTY LEVELS

Level 1: Basic Grouping

Group sources that say similar things.

Level 2: Pattern Recognition

Identify trends, agreements, and disagreements across sources.

Level 3: Critical Analysis

Evaluate strengths, weaknesses, and research gaps.

Level 4: Advanced Integration

Create new frameworks by connecting ideas across sources.

☐ EXERCISE 1: SUMMARY VS. SYNTHESIS IDENTIFICATION

Instructions: Identify whether each example is SUMMARY or SYNTHESIS.

Example A:

“Garcia (2023) conducted a study with 500 participants and found that exercise improves mood. The study used a randomized controlled trial design and measured mood using the Beck Depression Inventory.”

This is: ☐ Summary ☐ Synthesis

Why? _____

Example B:

“Multiple longitudinal studies have established exercise as an effective intervention for depression, with effect sizes ranging from moderate to large (Garcia, 2023; Smith, 2022; Johnson, 2021). However, research disagrees on optimal duration and intensity, with some studies suggesting 30 minutes daily (Garcia, 2023) while others recommend 60 minutes (Smith, 2022).”

This is: ☐ Summary ☐ Synthesis

Why? _____

Example C:

“Brown (2022) argues that meditation reduces stress. The study included 200 participants who meditated for 20 minutes daily for 8 weeks.”

This is: ☐ Summary ☐ Synthesis

Why? _____

Example D:

“While early research focused primarily on physical benefits of meditation (Brown, 2018; Taylor, 2019), recent studies have shifted toward neurological mechanisms (Kim, 2022; Lopez, 2023), revealing structural brain changes in regions associated with emotional regulation. This evolution reflects broader trends in contemplative science toward biological explanations.”

This is: ☐ Summary ☐ Synthesis

Why? _____

ANSWER KEY (Check Your Work)

Example A: SUMMARY - Describes only one study’s methods and findings

Example B: SYNTHESIS - Combines multiple sources, identifies patterns AND contradictions

Example C: SUMMARY - Only describes one source

Example D: SYNTHESIS - Shows evolution of research over time, identifies shift in focus, your analysis leads

 EXERCISE 2: TRANSFORM SUMMARY INTO SYNTHESIS

Instructions: Rewrite these summaries as synthesis by combining sources and adding analysis.

Practice 1: Social Media

Given Information: - Source A (Lee, 2023): Instagram use correlates with body dissatisfaction in teenage girls - Source B (Wang, 2022): TikTok engagement predicts anxiety symptoms
- Source C (Davis, 2023): Snapchat use shows no significant mental health effects

Current Writing (Summary Style): “Lee (2023) found that Instagram use correlates with body dissatisfaction in teenage girls. Wang (2022) found that TikTok engagement predicts anxiety symptoms. Davis (2023) found that Snapchat use shows no significant mental health effects.”

Your Synthesis (Rewrite combining all three):

Synthesis Checklist for Your Answer: - ☐ Combined all three sources in one discussion
- ☐ Identified pattern or difference between platforms - ☐ Your analytical voice leads the discussion - ☐ Sources support (not lead) the analysis - ☐ Noted platform-specific differences

Practice 2: Climate Change

Given Information: - Source A (Martinez, 2023): Carbon taxes reduced emissions by 15% in Sweden - Source B (Thompson, 2022): Carbon taxes showed minimal impact in Australia - Source C (Kim, 2023): Success depends on tax level and revenue recycling

Current Writing (Summary Style): “Martinez (2023) studied carbon taxes in Sweden. Thompson (2022) studied carbon taxes in Australia. Kim (2023) analyzed factors affecting carbon tax success.”

Your Synthesis (Rewrite combining all three):

Synthesis Elements to Include: - ☐ Explain the contradiction between Studies A and B - ☐ Use Study C to resolve the apparent contradiction - ☐ Identify the key factor (context matters) - ☐ Lead with your analytical insight

Practice 3: Remote Work

Given Information: - Source A (Brown, 2023): Remote workers report higher productivity (n=1,000) - Source B (Garcia, 2022): Remote workers report higher productivity (n=500) - Source C (Wilson, 2023): Remote workers report higher productivity (n=750) - Source D (Chen, 2022): Remote work productivity depends on job type

Current Writing (Summary Style): “Brown (2023) found remote workers are more productive. Garcia (2022) also found remote workers are more productive. Wilson (2023) similarly found remote workers are more productive.”

Your Synthesis (Rewrite combining all four):

Advanced Challenge: - ☐ Avoid listing all studies separately - ☐ Use collective language (“Multiple studies...” or “Research consistently...”) - ☐ Cite all supporting sources together in one citation cluster - ☐ Include the nuancing study (Study D) - ☐ Show methodological strength (mention combined sample size)

☐ EXERCISE 3: THEMATIC SYNTHESIS BUILDER

Instructions: You have 6 sources on “Factors Affecting Student Performance.” Organize them thematically and write synthesis paragraphs.

Given Sources:

Source 1 - Anderson (2023): Sleep quality strongly predicts GPA ($r=0.65$, $p<.001$)
Source 2 - Martinez (2022): Study environment affects concentration and test scores
Source 3 - Kim (2023): Sleep duration under 7 hours correlates with poor academic outcomes
Source 4 - Lopez (2022): Time management skills predict academic success
Source 5 - Taylor (2023): Quiet study spaces improve retention by 40%
Source 6 - Wilson (2022): Students with planners achieve 20% higher grades

Step 1: Identify Themes

Group sources by theme:

Theme 1: _____

Sources that fit: #_____, #_____, #_____

Theme 2: _____

Sources that fit: #_____, #_____, #_____

Theme 3 (if applicable): _____

Sources that fit: #_____, #_____

Step 2: Write Synthesis for Theme 1

Theme 1 Synthesis Paragraph:

Self-Check: - ☐ Topic sentence introduces the theme - ☐ Multiple sources cited together
- ☐ Specific evidence/data included - ☐ Relationships between studies shown - ☐ Your analysis connects the sources

Step 3: Write Synthesis for Theme 2

Theme 2 Synthesis Paragraph:

Step 4: Write Synthesis Connecting Both Themes

Cross-Theme Synthesis:

Advanced Elements: - ☐ Shows how themes interact or relate - ☐ Identifies broader pattern across themes - ☐ Suggests implications or future research - ☐ Demonstrates sophisticated analytical thinking

□ EXERCISE 4: AGREEMENT & DISAGREEMENT SYNTHESIS

Instructions: Practice synthesizing sources that agree AND disagree.

Scenario: Homework Effectiveness

Agreement Sources: - Chen (2023): Homework improves retention by 30% - Davis (2022): Students with regular homework score 15% higher on tests - Wilson (2023): Homework reinforces classroom learning

Disagreement Sources: - Martinez (2022): Homework shows no significant effect on long-term learning - Kim (2023): Excessive homework increases stress without academic benefits - Lopez (2022): Quality of homework matters more than quantity

Task: Write a Balanced Synthesis

Your Synthesis Paragraph (combining all 6 sources):

Required Elements: - ☐ Present both perspectives fairly - ☐ Use transition words (However, Conversely, While, In contrast) - ☐ Identify what might explain the disagreement - ☐ Avoid taking a side (synthesis, not argument) - ☐ Lead with your analytical framing

Suggested Structure: 1. Introduce the debate/disagreement 2. Present evidence for position A (cite multiple sources) 3. Present evidence for position B (cite multiple sources) 4. Analyze what might explain the difference 5. Identify research gaps or future directions

□ EXERCISE 5: SYNTHESIS SENTENCE STARTERS

Practice using these academic phrases for effective synthesis:

Agreement/Pattern Recognition

Fill in the blanks with sources and findings:

1. “Research consistently demonstrates that _____ (finding), with studies showing _____ (Source A, Year; Source B, Year).”

Your Example: _____

2. “Multiple studies have established _____ as a key factor in _____ (Source A, Year; Source B, Year; Source C, Year).”

Your Example: _____

Contradiction/Disagreement

3. “While some research suggests _____ (Source A, Year), other studies have found _____ (Source B, Year), indicating _____.”

Your Example: _____

4. “The literature presents conflicting findings regarding _____, with _____ (Source A, Year) reporting _____ but _____ (Source B, Year) showing _____.”

Your Example: _____

Evolution Over Time

5. “Early research focused on _____ (Source A, Year; Source B, Year), but recent studies have shifted toward _____ (Source C, Year; Source D, Year).”

Your Example: _____

Methodological Comparison

6. “Quantitative studies have demonstrated _____ (Source A, Year; Source B, Year), while qualitative research reveals _____ (Source C, Year).”

Your Example: _____

Gap Identification

7. “Although extensive research has examined _____ (Source A, Year; Source B, Year), few studies have investigated _____, representing a significant gap.”

Your Example: _____

☐ EXERCISE 6: FIX THE SYNTHESIS

Instructions: Identify problems and rewrite these weak synthesis attempts.

Example 1

Weak Synthesis: “Smith says exercise is good. Jones agrees. Brown also thinks so.”

Problems Identified:

- ☐ Too informal
- ☐ No specific findings
- ☐ No citations

- ☐ Sources listed, not synthesized
- ☐ Vague language (“good,” “thinks”)

Your Improved Version:

Example 2

Weak Synthesis: “Many researchers have studied social media. Smith (2023) studied Instagram. Jones (2022) studied TikTok. Brown (2021) studied Snapchat. All of them found interesting results.”

Problems Identified:

- ☐ Sources listed separately
- ☐ No actual synthesis
- ☐ Vague (“interesting results”)
- ☐ Missing specific findings
- ☐ No pattern identified

Your Improved Version:

Example 3

Weak Synthesis: “Smith (2023) found that meditation reduces stress by 40%. The study had 500 participants and used a randomized controlled trial design. Participants meditated for 20 minutes daily for 8 weeks. The results were statistically significant at $p < .001$.”

Problems Identified:

- ☐ This is summary, not synthesis
- ☐ Only one source
- ☐ Too much methodological detail
- ☐ No comparison to other research
- ☐ No broader context

Your Improved Version (add 2-3 imaginary sources to create synthesis):

☐ EXERCISE 7: VISUAL SYNTHESIS MAPPING

Instructions: Create a visual map showing how sources relate before writing your synthesis.

Topic: Effects of Music on Cognitive Performance

Sources: - A: Classical music improves spatial reasoning (Mozart Effect) - B: Background music impairs reading comprehension - C: Familiar music reduces cognitive load during routine tasks - D: Music with lyrics distracts during complex problem-solving - E: Instrumental music enhances creativity

Visual Organization (Draw or Describe Connections):

POSITIVE EFFECTS

Sources: _____

NEGATIVE EFFECTS

Sources: _____

MODERATING FACTORS:

- Task Type: _____
- Music Type: _____
- Familiarity: _____

Now Write Synthesis Based on Your Map:

☐ SYNTHESIS QUALITY SELF-ASSESSMENT

After writing any synthesis, check your work:

Content Quality

- ☐ **Multiple sources combined:** At least 2-3 sources per main point
- ☐ **Pattern identified:** Shows agreement, disagreement, or trend
- ☐ **Specific evidence:** Includes data, statistics, or concrete findings
- ☐ **Critical analysis:** Evaluates strengths, limitations, or gaps
- ☐ **Your voice leads:** Your analysis comes first, sources support

Structure & Flow

- ☐ **Topic sentence:** Clearly introduces the theme or point
- ☐ **Logical organization:** Ideas flow logically from one to next
- ☐ **Transitions used:** Smooth connections between ideas
- ☐ **No source listing:** Sources discussed together, not separately
- ☐ **Conclusion/implication:** Shows why this matters

Technical Quality

- ☐ **Proper citations:** All sources cited correctly
- ☐ **Academic language:** Formal, precise terminology
- ☐ **Present tense:** Uses present tense for discussing sources
- ☐ **Balanced treatment:** Fair presentation of all perspectives
- ☐ **No plagiarism:** Everything in your own words (except quotes)

Advanced Quality

- ☐ **Methodological awareness:** Notes sample sizes, study designs
- ☐ **Temporal context:** Indicates when research was conducted if relevant
- ☐ **Gap identification:** Points out what's missing or needs study
- ☐ **Cross-discipline:** Connects ideas across different fields (if relevant)
- ☐ **Theoretical grounding:** Links to theoretical frameworks

☐ SYNTHESIS TEMPLATES

Use these fill-in templates for quick synthesis construction:

Template 1: Basic Agreement

“Research consistently demonstrates that [MAIN FINDING], with [#] studies showing [SPECIFIC EVIDENCE] ([Source A, Year]; [Source B, Year]; [Source C, Year]). These findings are particularly robust across [CONTEXTS/POPULATIONS], suggesting [IMPLICATION].”

Template 2: Disagreement/Debate

“The literature presents conflicting views on [TOPIC]. Some researchers argue that [POSITION A] ([Source A, Year]; [Source B, Year]), citing [EVIDENCE]. However, other studies suggest [POSITION B] ([Source C, Year]; [Source D, Year]), based on [DIFFERENT EVIDENCE]. This disagreement may stem from [METHODOLOGICAL DIFFERENCES / CONTEXT / POPULATION].”

Template 3: Evolution Over Time

“Early research on [TOPIC] focused primarily on [EARLY FOCUS] ([Source A, Year]; [Source B, Year]). However, recent studies have shifted toward [NEW FOCUS] ([Source C, Year]; [Source D, Year]), reflecting [BROADER TREND/DEVELOPMENT]. This evolution has revealed [NEW INSIGHTS].”

Template 4: Methodological Synthesis

“[RESEARCH TYPE A] studies have consistently found [FINDING A] ([Source A, Year]; [Source B, Year]), while [RESEARCH TYPE B] research reveals [FINDING B] ([Source C, Year]; [Source D, Year]). Together, these complementary approaches suggest [INTEGRATED UNDERSTANDING].”

Template 5: Gap Identification

“While extensive research has examined [WELL-STUDIED ASPECT] ([Source A, Year]; [Source B, Year]; [Source C, Year]), relatively few studies have investigated [UNDERSTUDIED ASPECT]. This gap is particularly significant because [IMPORTANCE], suggesting a valuable direction for future research.”

☐ COMMON SYNTHESIS MISTAKES & FIXES

Mistake	Example	Fix	Better Version
Source Listing	“Smith says X. Jones says Y. Brown says Z.”	Combine sources under common themes	“Research consistently shows X (Smith; Jones; Brown).”
Over-Quoting	“Smith states ‘social media affects teens’ and Jones argues ‘platforms impact youth’.”	Paraphrase and synthesize	“Multiple studies demonstrate social media’s impact on adolescents (Smith; Jones).”
No Analysis	“Three studies found that exercise helps.”	Add specificity and implications	“Exercise interventions consistently improve mental health outcomes, with effect sizes ranging from moderate to large (Smith; Jones; Brown).”
Source-Led	“According to Smith... Jones also found... Brown discovered...”	Lead with your analysis	“Sleep quality emerges as a critical factor, with multiple studies showing...”
Vague Language	“Many studies show that things improved.”	Be specific	“Five randomized controlled trials (n=2,500) demonstrate 30% improvement...”

☐ ADVANCED SYNTHESIS CHALLENGE

Complex Multi-Source Integration:

Write a 200-word synthesis paragraph using these 8 sources on “Factors Affecting Employee Retention”:

1. Salary increase of 10%+ reduces turnover by 25% (Smith, 2023)
2. Work-life balance rated most important by 68% of employees (Jones, 2022)
3. Career development opportunities predict retention (Brown, 2023)
4. Toxic management causes 40% of voluntary departures (Davis, 2022)
5. Remote work options increase retention by 15% (Wilson, 2023)
6. Company culture matters more than salary for millennials (Kim, 2022)
7. Recognition programs show minimal retention impact (Lopez, 2022)
8. Combined factors create strongest retention outcomes (Taylor, 2023)

Your Challenge Synthesis (200 words):

Advanced Evaluation Criteria: - ☐ All 8 sources incorporated (not necessarily cited separately) - ☐ Multiple themes identified and organized - ☐ Contradictions addressed (Source 6 vs. Source 1; Source 7 stands alone) - ☐ Source 8’s integrative finding used to conclude - ☐ Specific data included for credibility - ☐ Your analytical framework leads the discussion - ☐ Implications for practice suggested - ☐ Stays within 200-word limit

□ SYNTHESIS LANGUAGE BANK

Use these academic phrases to strengthen your synthesis:

Showing Agreement

- “Research consistently demonstrates...”
- “Studies converge on the finding that...”
- “Multiple investigations have established...”
- “A growing body of evidence suggests...”
- “Scholars agree that...”

Showing Disagreement

- “The literature presents conflicting findings...”
- “Research yields mixed results regarding...”
- “While some studies suggest X, others indicate Y...”
- “Scholars debate whether...”
- “Contradictory evidence exists concerning...”

Showing Evolution

- “Early research focused on... Recent studies have shifted to...”
- “The field has evolved from... toward...”
- “Initial investigations examined... Contemporary research explores...”
- “Historically,... Current trends indicate...”

Showing Patterns

- “Three distinct themes emerge...”
- “A common pattern across studies reveals...”
- “Consistent findings indicate...”
- “Research identifies four key factors...”

Showing Gaps

- “Few studies have examined...”
- “Research remains limited regarding...”
- “A notable gap exists in...”
- “Future research should address...”
- “Scholars have yet to investigate...”

Showing Implications

- “These findings suggest that...”
- “This research indicates...”
- “The implications extend to...”
- “Results demonstrate the importance of...”

□ FINAL PRACTICE: WRITE YOUR OWN SYNTHESIS

Topic: [Your Research Topic]

Your Sources (list 4-6):

1.

2. _____
3. _____
4. _____
5. _____
6. _____

Theme/Focus: _____

Your Synthesis Paragraph (150-200 words):

Self-Evaluation:

What synthesis techniques did you use? - ☐ Combined multiple sources - ☐ Identified pattern or theme - ☐ Included specific evidence - ☐ Noted agreements/disagreements - ☐ Your voice led the discussion - ☐ Cited sources properly - ☐ Added critical analysis - ☐ Identified implications or gaps

Areas for Improvement:

☐ SYNTHESIS MASTERY CHECKLIST

You've mastered synthesis when you can:

Level 1: Beginner ✓ - ☐ Combine 2-3 sources in one discussion - ☐ Identify basic agreements between sources - ☐ Use proper citation format - ☐ Write in your own words (no plagiarism)

Level 2: Intermediate ✓✓ - ☐ Combine 4-6 sources in one paragraph - ☐ Identify both agreements AND disagreements - ☐ Use academic synthesis language - ☐ Lead with your analytical voice - ☐ Include specific evidence/data

Level 3: Advanced ✓✓✓ - ☐ Synthesize 8+ sources in coherent discussion - ☐ Identify patterns across methodologies - ☐ Recognize evolution of field over time - ☐ Critically evaluate research quality - ☐ Identify research gaps - ☐ Connect ideas across disciplines

Level 4: Expert ✓✓✓✓ - ☐ Create new frameworks from existing research - ☐ Resolve apparent contradictions through analysis - ☐ Contribute original insights through synthesis - ☐ Demonstrate sophisticated critical thinking - ☐ Position your research in scholarly conversation

☐ PROGRESS TRACKER

Track your synthesis skill development:

Date	Exercise Completed	Sources Synthesized	Quality Level	Notes
			☐ Beginner ☐ Intermediate ☐ Advanced	
			☐ Beginner ☐ Intermediate ☐ Advanced	
			☐ Beginner ☐ Intermediate ☐ Advanced	

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☐ KEY TAKEAWAYS

Remember: 1. ☐ Synthesis = Combining ideas, not listing sources 2. ☐ Your analysis leads, sources support 3. ☐ Look for patterns, agreements, disagreements 4. ☐ Include specific evidence and data 5. ☐ Use academic language and proper citations 6. ☐ Practice regularly to build this critical skill

Synthesis is the heart of academic writing. Master it, and your literature reviews will excel! ☐

Need More Help? - Review exemplar literature reviews in your field - Consult your university's writing center - Practice with study groups - Ask for feedback from professors

Keep Practicing! ☐ ☐