Metacognition and Writing Assignments

HELPING STUDENTS THINK ABOUT WHAT THEY ARE DOING

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Assumptions about Writing Assignments

- Learners need to learn more than just grammar and vocabulary.

- Teachers commit a considerable amount of time reading, commenting on, editing and grading writing assignments and tests.

- Learners might not internalize teacher feedback and correction.

- Learners may benefit from thinking about on the how they felt and what they were thinking during the assignment.

What do Learners do in Writing Classes?

Schoonen, Snellings, Stevenson, & Gelderen (2009) argue that there is not enough stress on developing metacognitive knowledge or metacognitive experiences, and metacognitive strategies.

- L2 language classrooms usually focus on having L2 learners developing writing proficiency

Typically this emphasises
- lexical knowledge
- grammatical knowledge
- developing content
- Following typical writing organization patterns

Schoonen, Snellings, Stevenson, & Gelderen (2009)

Metacognition

WHAT IS IT?

Metacognition; Thinking about Thinking

- In psychology metacognition is as an executive process that manages difficult tasks such as

  "making inferences, recognizing assumptions, making deductions, coming up with interpretations, and evaluating arguments"

  (Magno, 2010, p. 150)

  - Metacognitive and cognitive strategies likely overlap.

    (Livingston, 2003)

Metacognition; Two Processes

Metacognitive knowledge

- Can help learners understand when and if a goal is met.

- Guides learners to emphasize specific goals.

(Flavell, 1979, 1987, Livingston, 2003)

Metacognition; Two Processes

Metacognitive experiences

Help raise a learner's awareness (their feelings + their experiences) by;

- linking personal experience to the goals of the task,

- linking what they know to the goals of the task,

- helping them understand how their favored mode of learning relates to task goals,

- Helping them to think how to best use their strengths to meet the task goals,

- Helping them to think about how their weaknesses and how they affect task goals.

(Flavell 1987; Schoenfeld 1983, 1985, 1987; Winn and Snyder 1996)

Metacognition and Critical Thinking

- Metacognitive activities thus relate to critical thinking by

    o helping learners to become more aware and self-reflective

- Metacognition can be viewed as a predictor of critical thinking
    o Demonstrates the ability of learners to have active control over the cognitive processes

- Metacognition is involved in developing higher order thinking skills (HOTS)

(Brown, 2004)

HOTS

A statement of a **learning objective** contains a **verb** (an action) and an **object** (usually a noun).

- The **verb** generally refers to [actions associated with] the intended **cognitive process**.
- The **object** generally describes the **knowledge** students are expected to acquire or construct. (Anderson and Krathwohl, 2001, pp. 4–5)

In this model, each of the colored blocks shows an example of a learning objective that generally corresponds with each of the various combinations of the cognitive process and knowledge dimensions.

Remember: these are **learning *objectives*** — not learning *activities*. It may be useful to think of preceding each objective with something like: "Students will be able to . . ."

*Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives (Complete edition). New York: Longman.

Create an innovative learning portfolio.

Reflect on one's progress.

Design an efficient project workflow.

Deconstruct one's biases.

Judge efficiency of sampling techniques.

Assemble a team of experts.

Use techniques that match one's strengths.

Integrate compliance with regulations.

Determine relevance of results.

Generate a log of daily activities.

Predict one's response to culture shock.

Carry out pH tests of water samples.

Differentiate high and low culture.

Check for consistency among sources.

Identify strategies for retaining information.

Clarify assembly instructions.

Provide advice to novices.

Select the most complete list of activities.

Recall how to perform CPR.

Classify adhesives by toxicity.

Respond to frequently asked questions.

Recognize symptoms of exhaustion.

Summarize features of a new product.

List primary and secondary colors.

The Knowledge Dimension

metacognitive Knowledge of cognition in general as well as awareness and knowledge of one's own cognition.

procedural How to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods.

conceptual The interrelationships among the basic elements within a larger structure that enable them to function together.

factual The basic elements students must know to be acquainted with a discipline or solve problems in it.

The Cognitive Process Dimension

create Put elements together to form a coherent whole; reorganize into a new pattern or structure.

evaluate Make judgements based on criteria and standards.

analyze Break material into constituent parts and determine how parts relate to one another and to an overall structure or purpose.

apply Carry out or use a procedure in a given situation.

understand Construct meaning from instructional messages, including oral, written, and graphic communication.

remember Retrieve relevant knowledge from long-term memory.

Model created by: Rex Heer
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For additional resources, see:
www.celt.iastate.edu/teaching/RevisedBlooms1.html

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Problems with Feedback

According to Ferris (2006) Most common forms of feedback on writing;

- Direct teacher correction and comments
- Peer feedback

Truscott (1996) has argued that there is:

- Debate on such feedback effectiveness
- Corrective feedback may be useless / detrimental as learners ignore the feedback / copy corrections.

However, learners seem to benefit from giving feedback more than receiving feedback

(Althauser & Darnall, 2001; Cho & MacArthur, 2011; Li, Liu, & Steckelberg, 2010; Lundstrom & Baker, 2009).

Stages to Metacognitive Writing

1. Pre-Writing
   - Receiving the assignment,
   - **Metacognitive Pre-Writing Task**
   - Researching, and brainstorming ideas
   - Planning, making an outline

2. During Writing
   - Following the outline writing sentences, and/or paragraphs
   - Writing topic sentences, supporting paragraphs, providing details, providing examples

3. Post-Writing (drafts 1+)
   - **Metacognitive Post-Draft Tasks I, II and III**
     - Peer feedback and correction
     - Teacher corrective guidance and feedback
     - Self-assessment and self-correction

An example

- As part of the curriculum, students are required to complete a 'process writing'
- They choose a topic from a select list.
- They research and draft the body of the essay.
- They then write the introduction and conclusion.
- They recieve feedback from the teacher &/or peers.
- They revise and submit a final 'draft'

Level: Advanced

Day: _____ **Period:** _____

Name: _____
(*Write your full name in romaji.*)

Student Number: _____

Essay structure: Introduction, body paragraph(s), and conclusion

Suggested length: 300 - 350 words

Topic: Write an essay on **ONE** of the following TOPICS. **Check** ☑ your topic choice.

☐ **TOPIC 1:** Compare and contrast life for endangered animals in the wild versus in captivity.

☐ **TOPIC 2:** Compare and contrast two animals that are well-known in popular culture / literature.

☐ **TOPIC 3:** Compare and contrast two animals: One that makes a good pet and one that does not.

After you finish each draft:
- check your writing at least once.
- staple your draft behind this page and any previous drafts.

Metacognitive Pre-Writing Task

Read the assignment hand out. Then, read each of the following 10 statements. Please consider your answer carefully and circle how much you agree or disagree with the following statements the number from 1 to 6.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

Statement	Scale
1. I am interested in the writing assignment.	1 2 3 4 5 6
2. I understand what the writing assignment is asking me to write about	1 2 3 4 5 6
3. I feel confident about my performance with the writing assignment.	1 2 3 4 5 6
4. I have a topic that I can write about.	1 2 3 4 5 6
5. I have an idea about what I am going to write.	1 2 3 4 5 6
6. I know what resources I am allowed to use (dictionary, internet research, etc).	1 2 3 4 5 6
7. I know what units/sections/pages of my textbook can help me complete the writing.	1 2 3 4 5 6
8. I know how to organize my ideas (paragraph organization, topic sentence, supporting sentences).	1 2 3 4 5 6
9. I feel that I will be able to included enough details to support my ideas.	1 2 3 4 5 6
10. I believe that readers understood my ideas/opinions.	1 2 3 4 5 6

Metacognitive Post-1st Draft Task I

Read your first draft. Then, read each of the following 10 statements. Please consider your answer carefully and circle how much you agree or disagree with the following statements the number from 1 to 6.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

1. I think that what I wrote is interesting.	1 2 3 4 5 6
2. I think that others will think that my topic is interesting.	1 2 3 4 5 6
3. I feel confident about my performance with the writing assignment.	1 2 3 4 5 6
4. I used the information I brain stormed / researched.	1 2 3 4 5 6
5. I followed my outline when I was writing.	1 2 3 4 5 6
6. I only used the resources I am allowed to use (dictionary, internet research, etc).	1 2 3 4 5 6
7. I checked my grammar for each sentence.	1 2 3 4 5 6
8. I checked my punctuation for each sentence.	1 2 3 4 5 6
9. I checked my paragraph organization (topic sentence, supporting sentences, details, explanations, etc).	1 2 3 4 5 6
10. I believe that readers will understood my ideas/opinions.	1 2 3 4 5 6

Metacognitive Post 1st Draft Task II

Self-review of writing

Read through your writing again. Consider the content. Think about the following questions and take note of your ideas.

1. What can be done do to improve the content of the writing? Write at least 3 ideas about what can be done to improve the content.

2. What do you think readers think or feel about what the writing? Write 2 ideas about what you think they might have felt/thought while reading the writing.

3. What information was missing from the writing? Write 2-3 ideas that you could have included in the writing.

4. How might that missing information from #3 improve the writing?

Peer review of writing

Read through your partner's writing. Consider the content. Think about the above questions and take note of your ideas on their paper.

Error Correction (sample)

Read through your writing and your partner's writing. Try to find errors that you made in the writing. Use the following to guide you and put a check beside any errors that you can find. Correct those errors to the best of your ability. Discuss with your partner if you need help.

- a/an/the
- Subject /Verb Agreement
  - He are…X we is… X
- Correct verb (past vs present or meaning)
  - The city has beautiful today. X
- Singular (child) vs plural (children)
  - Ex. Many people have a car. X / many people have car. X
- Spelling
  - /r/ vs /l/ (dairy vs daily

- Is each sentence complete? (It has the necessary subject & predicate/verb)
  - Sunshine nice. X-> The sun was shining nicely.
- Not enough variety in expressions /vocabulary or overuse of some expressions:
  - In recent years, delicious, etc
- Contractions
  - I'm, he's, It's
- Countable/noncountable nouns
  - Child/children, a lot of fish, almost everyone

Metacognitive Post-2nd Draft Task I

Read your 2nd draft. Then, read each of the following 10 statements. Please consider your answer carefully and circle how much you agree or disagree with the following statements the number from 1 to 6.

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

1. I think that what I wrote is interesting.	1 2 3 4 5 6
2. I think that others will think that my topic is interesting.	1 2 3 4 5 6
3. I feel confident about my performance with the writing assignment.	1 2 3 4 5 6
4. I read and tried to follow my partner's comments on my writing	1 2 3 4 5 6
5. I read and tried to follow my teachers corrections/advice.	1 2 3 4 5 6
6. I followed the formatting that my teacher asked me to follow (APA 6th edition)	1 2 3 4 5 6
7. I checked my grammar for each sentence.	1 2 3 4 5 6
8. I checked my punctuation for each sentence.	1 2 3 4 5 6
9. I checked my paragraph organization (topic sentence, supporting sentences, details, explanations, etc).	1 2 3 4 5 6
10. I believe that readers will understood my ideas/opinions.	1 2 3 4 5 6

General Observations

Students who attend the classes and follow the metacognitive tasks generally;

- Submit much better organized (structurally) writing assignments than those that miss the tasks.

- Submit assignments that are more individual and engaging to read/mark.

- Have fewer grammatical and lexical errors.

- Seem to be more willing to ask questions about corrections/advice or comments made by the teacher.

- Seem to find topics that are of specific interest to them (think outside the box for topics).

References

Brown, T. (2004). *Critical thinking and learning: An encyclopedia for parents and teachers: Bloom's taxonomy and critical thinking*. Westport: Greenwood Press.

Flavell, J. (1979). Metacognition and cognitive monitoring: a new area of cognitive-developmental inquiry. *American Psychologist, 34*, 906–911.

Flavell, J. H. (1987). Speculations about the nature and development of metacognition. In F. E. Weinerty & R. H. Kluwe (Eds.), *Metacognition, motivation, and understanding* (pp. 21–29). Hillsdale: Erlbaum.

Livingston, J. A. (2003). *Metacognition an overview*. Distributed by ERIC Clearinghouse.

Magno, C. (2010). The role of metacognitive skills in developing critical thinking. *Metacognition and Learning*, *5*(2), 137–156. https://doi.org/10.1007/S11409-010-9054-4

Schoonen, R., Snellings, P., Stevenson, M., & Van Gelderen, A. (2009). Towards a blueprint of the foreign language writer: The linguistic and cognitive demands of foreign language writing. *Writing in foreign language contexts: Learning, teaching, and research*, 77-101.

Schoenfeld, A. H. (1983). Episodes and executive decisions in mathematical problem solving. In R. Lesh & M. Landau (Eds.), *Acquisition of mathematics concepts and processes* (pp. 345–395). New York: Academic.

Schoenfeld, A. H. (1985). Making sense of "out loud" problem-solving protocols. *The Journal of Mathematical Behavior, 4*, 171–191.

Schoenfeld, A. H. (1987). What's all the fuss about metacognition? In A. H. Schoenfeld (Ed.), *Cognitive science and mathematics education* (pp. 189–215). Hillsdale: Lawrence Erlbaum Associates, Inc.

Winn, W., & Snyder, D. (1996). Cognitive perspectives in psychology. In D. H. Jonassen (Ed.), *Handbook of research for educational communication and technology* (pp. 112–142). New York: Simon & Schuster MacMillan.