Outline of the Constructivist Interpretation Process for
The Measure of Epistemological Reflection
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Introduction
This document serves as an overview of the constructivist interpretation process for the Measure of Epistemological Reflection (MER). It is intended for use in conjunction with a fuller description of the interpretation process and extensive descriptions of epistemological development. These sources are noted throughout the document. Use of the MER requires permission; forms for seeking permission are attached.

Phase One: Learning the Process
The constructivist interpretation process outlined here hinges on an in-depth understanding of existing theoretical perspectives of epistemological development in young adulthood. These perspectives frame the interpreter’s ability to make meaning of students’ responses to the MER, both in terms of existing theory and new possibilities. The primary framework used to guide this constructivist interpretation of the MER is the Epistemological Reflection model. To study this model, read:


In addition to describing these possibilities for epistemological development, I have also described these students’ stories about how they view themselves and their relations with other people. The next two articles and book help extend the Epistemological Reflection model to include these dynamics:


Although I do not advance the MER as a tool to assess development on other models of epistemological development, studying those models also helps gain useful perspective on the concept of epistemological development. Primary sources to read include:


Finally, understanding of the constructivist interpretation process in the context of interpreting the MER is necessary. That process is described in:


Effective use of this process hinges on careful study of these materials prior to interpreting MER responses.

**Phase Two: Identify the Central Reasons for the Respondent’s Thinking**

Now that you have an understanding of the various possibilities of how students make meaning of knowledge, it is time to read the MER responses of your particular students.

1. Read the entire response across the six pages to get a sense of the overall response.
2. Return to read the entire response per page to identify the central reasons the respondent gives for her/his thinking in each domain.

Turn to the next three pages for one students’ example MER responses and possible interpretations of her central reasons with these three domains.
Consider the example below regarding the role of the learner:

DO YOU LEARN BEST IN CLASSES WHICH FOCUS ON FACTUAL INFORMATION OR CLASSES WHICH FOCUS ON IDEAS AND CONCEPTS?

I like classes that focus on factual information because I like to know the answer.

WHY DO YOU LEARN BEST IN THE TYPE OF CLASS YOU CHOSE ABOVE?

If I can come up with an answer I like to know if it is the right one. I don’t like to rely on theories and concepts which could be wrong.

WHAT DO YOU SEE AS THE ADVANTAGES OF THE CHOICE YOU MADE ABOVE?

It gives instant self-recognition, because either your answer is right or it isn’t.

If it is wrong you can go back and get it right.

WHAT DO YOU SEE AS THE DISADVANTAGES OF THE CHOICE YOU MADE ABOVE?

In all conditions it is not always appropriate to get a “right” answer. So theories are often good to learn.

IF YOU COULD GIVE ADVICE TO ANYONE ON HOW BEST TO SUCCEED IN COLLEGE COURSEWORK, WHAT KIND OF ADVICE WOULD YOU GIVE THEM? TALK ABOUT WHAT YOU BELIEVE IS THE KEY TO DOING WELL IN COLLEGE COURSES.

Being in class and paying attention is not enough, you must go through your notes after class and make sure you understand them because the classes move quickly and if you don’t understand one point, it may lead to other confusing ideas.

This respondent, whom we will call Fran, suggests that her role as a learner is to get the right answer. In explaining this preference, she conveys that right answers are available in factual information but not in theoretical information, yet there is some value to learning theories. Finally she points out that understanding is crucial. Thus the central reasons for Fran’s thinking can be interpreted as getting the right answer when there is one and understanding when a right answer is not appropriate. [See the next phase for interpreting what these reasons might tell us about her epistemological development.]
Here is another page of Fran’s MER, this one focused on the role of peers:

DO YOU PREFER CLASSES IN WHICH THE STUDENTS DO A LOT OF TALKING, OR WHERE STUDENTS DON’T TALK VERY MUCH?

I like classes where the students do a lot of talking.

WHY DO YOU PREFER THE DEGREE OF STUDENT INVOLVEMENT/ PARTICIPATION THAT YOU CHOSE ABOVE?

I like to hear what other students have to say, and if they are thinking the same things I am.

WHAT DO YOU SEE AS THE ADVANTAGES OF YOUR PREFERENCE ABOVE?

When the students are involved there is more interest in the class and I think more learning takes effect. It is better than a boring lecture.

WHAT DO YOU SEE AT THE DISADVANTAGES OF YOUR PREFERENCE?

Maybe the amount of material needed to be covered is not done because of too much class participation.

WHAT TYPE OF INTERACTIONS WOULD YOU LIKE TO SEE AMONG MEMBERS OF A CLASS IN ORDER TO ENHANCE YOUR OWN LEARNING?

I do not feel that group discussions are effective, but I do feel, as I said above, that class participation including the teacher is very effective and helpful.

Fran’s interest in hearing her peers talk is aimed at hearing their ideas and seeing if they think the same things she does and making the class more interesting. The teacher must be included in these discussions for them to be effective, and potential drawbacks exist in the loss of covering needed material. Thus the central reasons for Fran’s thinking about peers could be interpreted as exposure to others ideas to see if hers are on track and to make class interesting, yet not believing that her peers have valid knowledge. [See the next phase for interpreting what these reasons might tell us about her epistemological development]
Finally, consider this last example from Fran, this one about the nature of knowledge:

**SOMETIMES DIFFERENT INSTRUCTORS GIVE DIFFERENT EXPLANATIONS FOR HISTORICAL EVENTS OR SCIENTIFIC PHENOMENA. WHEN TWO INSTRUCTORS EXPLAIN THE SAME THING DIFFERENTLY, CAN ONE BE MORE CORRECT THAN THE OTHER?**

No because they may have gotten their info from two different sources.

**WHEN TWO EXPLANATIONS ARE GIVEN FOR THE SAME SITUATION, HOW WOULD YOU GO ABOUT DECIDING WHICH EXPLANATION TO BELIEVE? PLEASE GIVE DETAILS AND EXAMPLES.**

Go ask the teacher where they got their info. Maybe talk to them about why they feel that way, and then decide if you think they are right. Look it up.

It may be a fact discrepancy or a theory evaluation.

**CAN ONE EVER BE SURE OF WHICH EXPLANATION TO BELIEVE? IF SO, HOW?**

Yes. I could go and look up the information myself and decide on my own which explanation to believe or make my own evaluation.

**IF ONE CAN'T BE SURE OF WHICH EXPLANATION TO BELIEVE, WHY NOT?**

Maybe it is completely a judgment call and 2 professors feel very differently about the subject. The only solution is just to learn each teacher’s explanation for that class.

Here Fran conveys that the two instructors may disagree because they got information from different sources. She further describes the possible disagreement as a fact discrepancy or a theory evaluation. She indicates that she could look up the facts and make a choice, or could make her own theory evaluation to choose. She clarifies that in the case it is “completely a judgment call” the only option for her as a student is to learn the appropriate explanation for each class. Thus Fran’s central reasons for her view of the nature of knowledge could be interpreted as some knowledge is factual, in which case one can find an answer, and some knowledge is theoretical, in which case the evaluation is a judgment call. [See the next phase for interpreting what these reasons might tell us about her epistemological development.]
Phase Three: Interpreting the Central Reasons re: Epistemological Reflection

Using Table 2.1\(^2\) consider the degree to which the respondent’s reasons resonate with the central reasons of each of the four ways of knowing: absolute, transitional, independent, and contextual. Table 2.1 contains the central reasons relevant to each way of knowing in each of the six domains assessed by the MER.

1. Begin by comparing the reason you identified on a particular domain response to that row in the table; it might be helpful to start with those domains in which you were most confident about your identification of the central reasons. Although you will have already read the stories accompanying Table 2.1 that reveal the fuller thinking from which these phrases emerged, you might want to refer to these stories as you compare your MER data to the central ideas in each way of knowing. There are also extensive stories for each way of knowing that will give you a context from which to understand ways of knowing and how your response might relate. If your response reflects contextual knowing, it would be useful to refer to the phases of the journey toward self-authorship\(^2\) that describe the refinement of contextual knowing.

   For example, let’s return to Fran’s responses about the role of the learner. The central reasons I interpreted in Phase Two initially look like obtaining knowledge from the instructor which is characteristic of absolute knowing. However, considering her whole response suggests that this is only possible in factual arenas, implying that knowledge is certain in those arenas. Because Fran argues that it isn’t always appropriate to get a right answer, this implies that some knowledge must be uncertain. Added to her focus on understanding, a more reasonable interpretation is that Fran’s comments reflect transitional knowing.

2. Repeat this process for each of the remaining domains. Although reading by domain is helpful for focus and depth of understanding, sometimes reading across domains is necessary as well. If you are uncertain about the respondent’s thinking in a particular domain, reading how it relates to others might further your understanding. For example, thinking about the role of the learner is sometimes clarified in the context of the person’s response about the role of peers.

   For example, let’s return to Fran’s response regarding the role of peers. The central reasons I interpreted in Phase Two were that Fran thought other students’ ideas were interesting but she did not regard them as valid knowledge. This suggests either absolute or transitional knowing because in independent and contextual she would regard her peers as capable of valid knowledge. Fran does not appear to focus on getting explanations from her peers, but rather on actively exchanging ideas to avoid

\(^2\) The tables noted here as well as stories from which they were constructed are found in Baxter Magolda, M. B. (1992). Knowing and reasoning in college: Gender-related patterns in students’ intellectual development. San Francisco: Jossey-Bass.

boredom. Thus her reasons are closer to transitional knowing. This interpretation is supported by her earlier comments on the role of the learner.

Looking at Fran’s comments on the nature of knowledge helps solidify the transitional knowing interpretation. In that response she conveys the notion that knowledge is partially certain and partially uncertain, again a core assumption of transitional knowing.

3. If you think that your respondent’s reasons can be understood using the ER model but you are uncertain how to choose between ways of knowing for a particular set of reasons, it might be helpful to read those reasons in the contexts of other reasons from other domains on the MER. Sometimes a set of reasons is unclear until it is put in the context of other parts of the person’s response. If you are confident about some of the domain interpretations, consider whether the ones about which you are uncertain could make sense from those vantage points (i.e., if you are confident that the nature of knowledge response reflects independent knowing, consider whether a response in the role of the learner could reflect independent knowing).

4. At this point, a way of knowing may emerge as a reasonable interpretation of the total response (i.e., if four domains clearly point to transitional knowing and two point to absolute, you could interpret that your respondent still has some absolute ways of knowing but primarily uses transitional knowing). If this is the case, proceed to the next phase on Extending Your Interpretation.

If no clear connection to a particular way of knowing is evident at this point, it may be because the respondent’s development is not captured in the ER model. Construct a description of the respondent’s thinking using the reasons you identified from each domain. You can then compare this description, generated from the students’ own response, to other models of epistemological development to see if they offer useful frameworks for understanding this response. It might also be the case that you have data that suggests a new possibility in our understanding of epistemological development. Regardless of these potential outcomes, you still have a description from which to understand the respondent’s thinking. If you have multiple respondents whose thinking is not captured by any existing model, you may have insights for a new theoretical model.

**Phase Four: Extending Your Interpretation to Include Additional Dynamics**

Gender-related patterns have emerged in some epistemological development research. These are believed to be styles or preferences that exist within ways of knowing. Thus the patterns hold equal complexity within a way of knowing rather than indicate a different way of knowing. However, patterns and structures can be hard to distinguish. To gain a fuller understanding of your respondent, you can further interpret the MER response via gender-related dynamics. [Note that gender-related means patterns may be more prevalent among women or men, but they are not exclusively used by a particular group. This is another example of development being context-bound.]
1. Reread your MER responses to refresh your sense of the style evident in the response. Using Tables 3.2 (absolute knowing patterns), 4.2 (transitional knowing patterns), and 5.2 (independent knowing patterns), see if you can extend and strengthen your interpretation of ways of knowing by finding consistencies between the responses and the patterns within each domain. If you do find consistencies, it extends your understanding of the respondent’s thinking. This process might also clarify an interpretation about which you were uncertain in the first step of interpreting ways of knowing. For example, you might find a pattern that matches a response that you interpreted earlier as a different way of knowing. This would prompt you to reconsider to decide on the most reasonable interpretation.

Returning to Fran, for example, look at the transitional knowing patterns to see if her response indicates one of these patterns. Although we have minimal commentary from her on each domain, reading across the three included here gives us a possible sense of her style [and we would have three more in an actual MER]. She focuses on hearing other students, does not mention debate, prefers student involvement in learning, would resolve uncertainty by personal judgment. Taken together, these notions might mean she leans toward the interpersonal pattern.

2. Although the ER model has not identified patterns related to other dynamics to date, other models might offer opportunities to further understand whether race, class, ethnicity, sexual orientation or other dynamics play a role in understanding your respondent. For that matter, other models may offer additional interpretations of gender as a mediator of epistemological development. Useful resources for exploring the dynamics of race, class, ethnicity, and sexual orientation include:


Phase Five: Dialogue with Respondents

Dialogue with respondents is recommended to heighten the accuracy of the interpretation. I do not recommend asking respondents if absolute knowing, for example, captures their thinking but rather sharing a description of that perspective to ask if it resonates with their thinking. These dialogues, whether individual or with groups, serve to refine the interpretation and ensure its quality prior to using it to shape educational practice.

A Note on Goodness of Constructivist Interpretation Processes

There are numerous approaches to insuring the goodness of constructivist interpretation – using methods that result in quality data from which to construct an interpretation, using multiple analysts, multiple methods or checking interpretations with respondents to heighten the accuracy of interpretation, and to provide sufficient context for others using the interpretation to judge its transferability. Incorporating some of these approaches is essential to creating a quality assessment of epistemological development.

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