| **Validity Matrix for a Study of Academic Engagement** |
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| **What do I need to know?**  | **Why do I need to know this?** | **What kind of Data will help me?** | **Analysis Plan** | **Validity threat***Why should it be believed?**How do we know conclusions are valid?* | **Possible strategies for dealing with validity threat** | **Rationale for strategies** |
| RQ 1: How do these teachers view/describe academic engagement? | Academic engagement is important for achievement but the components of academic engagement are not fully understood  | * Survey Motivation and engagement Scale- High School (MES-HS)
 | Cluster analysis: divide teachers into groups: (1)high teacher knowledge of academic engagement (2) average teacher knowledge of academic engagement, and (3) low teacher knowledge of academic engagement...allow other themes to emerge.Factor Analysis: reduce the questions into one super-variable to help me find the differences in teacher thinking. | * Responses could be too varied which could result in too many clusters
* Responses could be too homogeneous making it difficult to discriminate group membership
* I see these as possible *problems*, but not as threats to *validity.*
 | **Phase 1 data collection**Allow the data to fall where it may… continue with study not allowing this survey data to influence observation. How does this deal with the problems? | This data will be collected first but not analyzed until after several observations and collection of one or two grades. But before the interviews? This timing will help to make meaning of the survey data by comparing emerging theories about the process observed rather than trying to fit the data into the theory of one data set over another.  |
|  |  | * Observations
* it's not clear how this will address RQ1. Is there an implicit research question about *behavior* that this addresses? See RQ3.
 | verbatim transcribing, examining data for emerging themes coding analysis, comparing coding with 2nd coders | * Spurious associations
* Premature theories
* Researcher influence on setting
* Incomplete picture of setting/process
* Ignored data that does not fit interpretation/ theory
 | **Phase 2 Data collection*** Repeated observations
* Change vantage point/seating at each visit
* Record
* Detail descriptive note taking
* Member checking
 | To ensure rich data is collected the researcher/observer will conduct repeated observation. Repeated observations don't "ensure" rich data; this depends on the *kind* of observations you do. Placement for observations will vary to gain diverse vantage points to capture more of the classroom interactions and the processes involved in learning (Maxwell, 2013). A key issue in dealing with researcher influence is the relationship you establish with the teacher and students, and how they understand what you are doing. |
| = |  | * Semi-structured Interviews
 | Record, verbatim transcribing, examining data for emerging themes coding analysis, comparing coding with 2nd coders, reevaluate emerging themes  | * Social desirability, Respondents may not present their actual views
* Use of leading questions
 | **Phase 4 data collection*** Open ended script
* Record interviews
* Verbatim transcribing
* Allow ‘quiet’ time to answer questions
* 2nd coding person
* Member checking
* Good strategies
 | The interviews are conceptualized to minimize research bias by using open ended scripts. In addition, the interview question will be consistent for every participant while still allowing participants time to take the conversations in directions they deem important to explaining their views/descriptions of academic engagement.  |
| RQ 2: How do students view/describe academic engagement? | There is limited literature about how academic engagement is a tripartite dimension of behaviors, emotion and cognition  | * Survey Motivation and engagement Scale- High School (MES-HS)
 | * Factor analysis to reduce responses to measure academic engagement dimensions
* Cluster analysis to discover group membership for academic engagement levels: (1) high academic engagement, (2) low academic engagement, and (3) no academic engagement
 | * Responses could be too varied which could result in too many clusters
* Responses could be too homogeneous making it difficult to discriminate group membership
* Same issue as RQ1
 | **Phase 1 data collection**Allow the data to fall where it may… continue with study not allowing this survey data to influence observation. | As stated above for teacher survey, this data will be collected first but not analyzed until after several observations and collection of one or two grades. This timing will help to make meaning of the survey data by comparing emerging theories about the process observed rather than trying to fit the data into the theory of one data set over another. |
|  |  | * Observations
* same issue as RQ1
 | Record, verbatim transcribing, examining data for emerging themes coding analysis, comparing coding with 2nd coders, reevaluate emerging themes | * Spurious associations
* Premature theories
* Researcher influence on setting
* Incomplete picture of setting/process
* Ignored data that does not fit interpretation/ theory
 | **Phase 2 data collection*** Repeated observations
* Change vantage point/seating at each visit
* Audio Record
* Detail descriptive note taking

Member checking | To ensure rich data is collected the researcher/observer will conduct repeated observation. Placement for observations will vary to gain diverse vantage points to capture more of the classroom interactions and the processes involved in learning (Maxwell, 2013). |
|  |  | There is limited literature about how academic engagement is a tripartite dimension of behaviors, emotion and cognition How is this about data? | * Focus Group Interviews Shouldn't this be in "What kind of data?" I think some of this row got moved one column to the right.
 | Record, transcribe, code, compare coding, evaluate for emerging themes… Responses may not accurately reflect student ‘real’ thoughts as they may react to peers. | **Phase 3 data collection**A single moderator will conduct group discussion. A second research team member will observe and take detailed notes on student behaviors, interactions, reactions.  | It is posited classy writing that in a group atmosphere students will be more inclined to discuss and challenge each other’s opinions. This depends on the topic and participants; I would pilot test this. It is important to gain this peer perspective in order to understand how students think about academic engagement and achievement.  |
| RQ3: What is the difference in behavior, emotion, and cognition between high achieving students and lower achieving students?  | Understand the academic engagement profile of a high achieving student in order to formulate interventions for struggling students identified as having low academic engagement OK, but remember that correlation isn't causation. Differences in achievement could (at least partially) *cause* the differences in engagement, rather than being the result of these (feedback loop). | * GPA scores
 | ANOVA to compare the difference academic engagement profiles between high and low achieving students on academic engagement variables  | Dissonance of data to emerging views/descriptions of academic engagement | **Phase 5 data collection**Grades do not show association as expected. How does this deal with the threat? | It is difficult to talk about school engagement with measuring outcomes. Thus GPA has been chosen as the long-term outcome for academic engagement levels. |
|  | * Homework quality/quantity
* Attendance
 | ANOVA to compare the difference in academic engagement behaviors between the low and the high achieving students | Dissonance of data to emerging views/descriptions of academic engagement | Homework & attendance behavior do not show association as expected. Or this? | Like GPA, homework and attendance have been chosen as short-term measures of academic engagement. |
|  |  | * Survey Motivation and engagement Scale- High School (MES-HS)
 | ANOVA analysis on emotional engagement variables…compare these to answer from interviews | Does the data ‘truly identify emotional engagement: perseverance and resilience? | This data has to be verified with open ended questions during the focus interviews and observations.  | I believe that emotional academic engagement will be difficult to measure as it has to be viewed in context of the classroom and in the process of ‘doing the work.’ However, I plan to observe students before, during and after testing to document reactions to success and failure… a case study may ensue. Multiple case studies? |

Validation Matrix Memo

 In constructing this validity matrix, I have tried to integrate quantitative and qualitative methods to gain a better perspective of the complex constructs that are included in the study of academic engagement: emotional (perseverance, resilience, and attribution orientation), behaviors (attendance, work quality/quantity) and cognition (goal orientation, self-efficacy, and epistemological beliefs). Because I’m not confident in my ability to assess validity threat, it has not been easy to formulate a strategy for minimizing the validity threat. ☹ Notice that I wrote a note to myself in the matrix column for ‘validity threat,’ this note was a reminder that I need to make senseof the process from many perspective and with a thorough (or close to thorough) understanding of how the context is changed and changes a student. My hope is that the above matrix demonstrates a dialectical approach to examining the processes involved in academic engagement. The ultimate goal of the study will be operationalize the processes of academic engagement for creating interventions that can be used (transferred) across settings.

 While I am attempting to make ‘some’ correlations in order to explain what ‘may’ be happening in the realm of academic engagement and students, I am also trying to orient this study to explain the ‘multiple’ possible causes associated with academic engagement by looking at the ‘whole’ student. ☺ This holistic look at the student will include seeing them through the eyes of their teachers (teacher interviews); recording their academic behaviors through observations in the classroom and examining their homework patterns for quality and quantity. In addition, I plan to use quantitative data, grades and attendance, to explore past and present patterns of behavior that may be meaningful in explaining why students engage the way they do. A final, but critical, ingredient in the study is to gain student perspective about what they think, feel, and understand academic engagement to be. ☺

 This Matrix has been one of the most difficult tasks this semester. It is very difficult to question an idea that one feels is powerful. As I have tried to see the study through a critical stance and apply the doubting game to the questions and methods, at times I just could not see the forest for the trees! ☹

Silvia:

 This is a good first attempt at identifying validity threats and ways to deal with these. Some of what you list in the matrix makes good sense to me; there are other parts that I don't understand or have concerns about (see comments in the matrix). The study itself seems pretty complex; think about what data are going to be most essential to your conclusions. (I'm not sure what cluster/factor analysis of the teacher surveys will contribute to your understanding of students' engagement.)

Grade for assignment: A

Grade for course: A