LISTENING TO THE TEACHER WITHIN:
MEASURING INSIGHT IN FIRST YEAR PHYSICIAN ASSISTANT STUDENTS

Alexandria Garino, MS, PA-C
Yale University School of Medicine Physician Associate Program

BACKGROUND

Self-assessment is a core competency of many professions, and is required for self-regulated learning. Self-regulated learning is important if clinicians are to continue to learn—unaided—throughout professional life. For some, reflection is the tool used to develop these skills; however, reflection is necessary, but not sufficient. The monitoring required of self-assessment and self-regulated learning requires deep intuitive understanding. Accurate self-assessment enables the clinician to adapt, and adjust learning strategies. Reflection must lead to insight if accurate self-monitoring is to occur.

Few humans accurately judge their skills and knowledge, and fewer still are able to learn by comparing performance to that of an expert. This is particularly true of the poorest performers (Kruger & Dunning, 1999). Achievement goal theory may explain differences in self-assessment ability. Those with a performance goal orientation are less motivated to learn deeply and more driven to appear smart and protect the ego (Teunissen & Bok, 2013).

Students need to develop skills to support accurate self-assessment if they are to continue to grow as clinicians. This study explored insight from the perspective of achievement goal orientation. The following research questions guided this study:

1. Do physician assistant (PA) students use higher order reflection skills in their self-assessment of performance?
2. Does an education intervention improve insight ability in this population?

METHODS

A mixed methods, quasi-experimental design was used to study the insight ability of first year physician assistant (PA) students. Cohort 1 was enrolled in the didactic phase of the program in academic year 2013-2014; Cohort 2 was enrolled in academic year 2014-2015. All students completed a mandatory class assignment where they conducted a 15-minute medical interview with a standardized patient and recorded their performance with a program-provided iPad. They then compared their performance to that of a master clinician by watching a recorded medical interview. Students were required to write a 2-3 page reflective essay critiquing their performance. Essays from both Cohorts 1 and 2 contributed the data used for qualitative analysis.

Students in Cohort 2 had a 5-hour education intervention added to the curriculum where they examined learning strategies, reflection, and self-assessment. They also completed the Self-reflection and Insight Scale (SRIS; Grant et al., 2002). Performance goal orientation was assessed. The education intervention and SRIS were deployed before the recorded standardized patient interview. The SRIS was deployed to Cohort 2 only. Essays were coded using the constant comparative method. Correlational and reliability analyses were performed on the survey data. A sequential bivariate analysis was performed to examine the association between performance goal orientation and student perception of reflection and insight ability as measured by the SRIS.

Qualitative data was emphasized and quantitative data was used to explain phenomena.

RESULTS

Participant Characteristics

<table>
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<tr>
<th>Number of Participants (n)</th>
<th>Cohort 1</th>
<th>Cohort 2</th>
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</thead>
<tbody>
<tr>
<td>Response Rate</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>Gender, female</td>
<td>47%</td>
<td>52%</td>
</tr>
<tr>
<td>Median age (range)</td>
<td>24 (22 – 34)</td>
<td>25 (23 – 33)</td>
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1. PA students were able to distinguish between their performance and the performance of an expert.
   - Strengths were considered more often than weaknesses.
     - This was not a significant difference (code frequency 176 vs. 156; $\chi^2 = 91.41, p = .06$).
     - Behaviors were described and explored more often than emotions.
     - Only 1 participant named an emotion, but s/he did not explore the meaning behind emotion.

2. Insightful essays were more likely to describe higher order reflection skills.
   - Essays were stratified based on insight ability and categorized as insightful, evolving, or unaware.
   - Participants did not describe metacognitive processes consistent with critical reflection.
   - Yet, 6 participants were categorized as insightful.
   - Insightful essays elaborated, identified and considered a dilemma more often than unaware essays.
   - Unaware essays described behavior more often than insightful essays.

3. Cohort 2 responded to the education intervention.
   - More insightful essays were from Cohort 2 ($n = 5$) than from Cohort 1 ($n = 1$).
   - More unaware essays were from Cohort 1 ($n = 4$) than from Cohort 2 ($n = 2$).

4. Performance goal orientation was associated with perception of reflection and insight ability.
   - The Self-reflection and Insight Scale constructs were regressed on performance goal orientation.
   - The Self-reflection and Insight Scale explained 49% of the variance in the model $(p = .01)$.
   - Need for self-reflection explained the largest portion of the overall variance $(R^2 = 0.32, p = .01)$

<table>
<thead>
<tr>
<th>Scale</th>
<th>Insightful ($n = 4$)</th>
<th>Evolving ($n = 13$)</th>
<th>Unaware ($n = 2$)</th>
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<tbody>
<tr>
<td>Engagement in self-reflection (i.e., practices reflection)</td>
<td>3.87 ± .16</td>
<td>3.48 ± .46</td>
<td>3.50 ± 1.16</td>
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<td>Need for self-reflection (i.e., psychological mindedness)</td>
<td>4.62 ± .43</td>
<td>3.92 ± .70</td>
<td>3.75 ± 1.41</td>
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<td>Insight (i.e., internal awareness)</td>
<td>3.33 ± .71</td>
<td>3.08 ± .67</td>
<td>3.33 ± .77</td>
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<tr>
<td>Performance goal oriented (i.e., motivated to look smart and protect the ego)</td>
<td>3.73 ± .79</td>
<td>3.20 ± 1.06</td>
<td>3.83 ± .70</td>
</tr>
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Note: SRIS = Self-reflection and Insight Scale. One respondent, classified as Insightful in the qualitative analysis, did not complete any item on the SRIS. Data associated with that unique ID was removed from analysis. Only Cohort 2 data is reported.

CONCLUSIONS

- Insightful participants used higher order reflection skills more often than those less skilled with reflection.
- Insightful participants practice reflection and consider reflection personally important to a greater extent than weaknesses. This may reflect performance goal orientation and the need to protect the developing professional ego.
- Insight can be developed in this population and should be included throughout the curriculum.
- More research is needed. Achievement goal theory is an effective lens through which to examine self-assessment and insight.

LIMITATIONS

- This study did not measure the accuracy of observations and only considered if participants were aware of behaviors and made a judgment about that behavior within the context of an essay.
- Student writing ability varies. Participants may be more insightful than they are able to express.
- Students were incentivized with a course grade for the original course assignment. They may have been telling the professor what they thought was needed to achieve a good grade. This is more likely if students are performance goal oriented.
- The pilot study is neither robust nor generalizable. The sample size was small and the study was conducted at one institution.
- Gender bias may be present as there were more females in Cohort 2. It is possible that males and females differ in their reflective and insight abilities.

REFERENCES


SPECIAL THANKS

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