Student Perceptions Regarding the Significance of Prerequisite Course Material

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The most influential predictor for success for the first semester of the second-degree BSN program is admissions test scores (Kowitlawakul, Y. et al. (2013) Predictors for success for first semester, second-degree Bachelor of Science in Nursing students. International Journal of Nursing Practice: February 2013, Vol. 19, No. S1, pp. 38-43.)

“The quantity of prerequisite courses and their timing are found to significantly influence student performance in the introductory science course. This shows that adequate and timely exposure to prerequisite subjects are helpful in learning finance. (Blaylock, A. and Lacewell, S.K. (2008) Assessing Prerequisites as a Measure of Success in a Principles of Finance Course. Academy of Educational Leadership Journal: January 2008, Vol. 12, No.1.)

“Faculty-driven model of the function of prerequisites yielded better course performance than the student-driven model and both failure and withdrawal rates of students in [the] Department of Biology courses at [the University of South Florida] dropped significantly when prerequisites were enforced.” (McCoy, E.D. and Pierce, S.K. (2004) The Function of Course Prerequisites in Biology. American Institute of Biology: ERIC number: ED501350.)
The Problem with Prerequisite Courses

1. Microcosms of Learning
   - Test-to-test “learning”
   - Students are GPA-driven (not content/application)
   - If info retention does occur it is mostly rote memorization

2. Little class-to-class knowledge building
Motivation for this Study

1. Gain an understanding of the problem
   ○ Scope and magnitude
   ○ Quantitative and qualitative data

2. Have some pilot data to guide faculty conversation on this issue
Indicate how strongly you agree or disagree with the following statements:

1a) If you are a FRESHMAN/SOPHOMORE: I think the material taught in prerequisite courses is important for my success in upper level courses in my major.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

1b) If you are a JUNIOR/SENIOR: The material taught in prerequisite courses was relevant to my upper level courses with prerequisite requirements.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

2) For any class year: Prerequisite course requirements could be better structured to improve core knowledge for success in upper level courses.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

3) For any class year: The value of prerequisite courses for future success is adequately conveyed in these courses.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

4) For any class year: Do you have suggestions for improving the prerequisite course requirements, or the relevancy of the information/content in prerequisite courses, to upper level courses?

5) For any class year: What, if anything, do you wish someone told you regarding prerequisite courses?
1a) Fr/So: I think the material taught in prerequisite courses is important for my success in upper level courses in my major.
1b) Ju/Se: The material taught in prerequisite courses was relevant to my upper level courses with prerequisite requirements.
2) Prerequisite course requirements could be better structured to improve core knowledge for success in upper level courses.
3) The value of prerequisite courses for future success is adequately conveyed in these courses.
### Data

**Results by Academic Year**

<table>
<thead>
<tr>
<th>Year</th>
<th>n</th>
<th>Q1</th>
<th>sd</th>
<th>Q2</th>
<th>sd</th>
<th>Q3</th>
<th>sd</th>
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</thead>
<tbody>
<tr>
<td>1-Fr</td>
<td>15</td>
<td>4.47</td>
<td>0.52</td>
<td>3.87</td>
<td>0.64</td>
<td>3.93</td>
<td>0.88</td>
</tr>
<tr>
<td>2-So</td>
<td>33</td>
<td>3.88</td>
<td>0.70</td>
<td>4.12</td>
<td>0.74</td>
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<tr>
<td>3-Ju</td>
<td>88</td>
<td>3.90</td>
<td>0.84</td>
<td>3.77</td>
<td>0.85</td>
<td>3.45</td>
<td>0.80</td>
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<tr>
<td>4-Se</td>
<td>122</td>
<td>3.73</td>
<td>0.84</td>
<td>3.93</td>
<td>0.93</td>
<td>3.30</td>
<td>0.84</td>
</tr>
</tbody>
</table>

1a) Fr/So: I think the material taught in prerequisite courses is important for my success in upper level courses in my major.
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<table>
<thead>
<tr>
<th>Program</th>
<th>n</th>
<th>Q1</th>
<th>sd</th>
<th>Q2</th>
<th>sd</th>
<th>Q3</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
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<td>0.93</td>
<td>3.75</td>
<td>1.24</td>
<td>2.82</td>
<td>0.81</td>
</tr>
<tr>
<td>Bio</td>
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<td>3.84</td>
<td>0.78</td>
<td>3.61</td>
<td>0.88</td>
</tr>
<tr>
<td>BSN</td>
<td>157</td>
<td>3.83</td>
<td>0.80</td>
<td>3.97</td>
<td>0.85</td>
<td>3.40</td>
<td>0.82</td>
</tr>
<tr>
<td>Fit</td>
<td>7</td>
<td>3.71</td>
<td>0.76</td>
<td>3.86</td>
<td>0.38</td>
<td>3.50</td>
<td>0.84</td>
</tr>
<tr>
<td>HS</td>
<td>46</td>
<td>3.91</td>
<td>0.76</td>
<td>3.72</td>
<td>0.89</td>
<td>3.22</td>
<td>0.76</td>
</tr>
</tbody>
</table>
Key Themes from Qualitative Data

BIO/HS/BSN students:

1. (upper-level) wished they were told the *true* importance of prerequisite knowledge.

2. believe prerequisite knowledge would be better retained if instructors tell them how they’ll need it in future classes.

3. have a low appreciation or desire for IDS and/or liberal arts education in that it lacks applicability to major classes.

4. perceive advising deficits.
Quotes — Q4, positive

- No, I think prerequisites prepare you for the workload in future classes. —Freshman, HS

- I believe that the courses should be required because it adds more of a workload. —Sophomore, HS

- With A&P I felt that no pre-requisite class prepared me for that at all. I feel A&P I is where I learned how to study and memorize immensely. I know from that I use those skills in all of my other classes! —Junior, Bio
Quotes — Q4, negative

- Have more classes available just so you don’t have to wait too long and then run out of time. —Sophomore, HS

- Why take prerequisites we will never have to use in our major? Make them relevant. —Sophomore, HS

- Make prerequisites courses major specific. —Senior, AT

- I feel that we should only take prerequisite courses that suit our upper level courses. —Sophomore, AT

- I didn’t like having IDS courses as pre-requisites. They were boring and not relevant to my major at all. —Sophomore, AT

- Pre-reqs are supposed to be information that will help in the next class. Some teachers don’t focus on that. Most teachers should be on the same page about what needs to be known so the transition can be a little easier. —Junior, Fit
Quotes — Q5

- That we would have to take classes that will never help you later in life. — Sophomore, AT
- The better you do in them the easier the upper level classes will be. — Junior, AT
- That it would affect my career, not just school. — Sophomore, HS
- Not everything makes sense. We take what we have to take. I took classes that didn’t directly involve my major but they opened my eyes to new things. — Sophomore, BSN
- What we need to expect and how willing the professor is to help you and teach you. — Sophomore, AT
- A lot of it you will not use in your college career, but find something you enjoy about the class anyway. Anything can be interesting if you look at it the right way. — Senior, Bio
Quotes — Advising

- They should tell you what prerequisite courses you’ll need in the future. —Freshman, Bio

- How early you should take them. For certain classes, be told they are only offered in the spring or in the fall. —Sophomore, HS

- Which upper level courses correspond to prerequisite courses. Allows for better upper level planning/less constriction on available upper level course options. —Senior, HS

- My advisor never informed me of taking a particular course as a pre-req and I had to do research on my own. Perhaps inform the students right off the bat. —Senior, HS

- Someone should state, that [the] sooner you declare [a major] the better. There are a lot of pre-reqs to take and its important to start ASAP. —Junior, Bio
• The data took us in an unexpected direction

• A need for more rigorous formative assessment?
  ○ Our findings are certainly not comprehensive!
  ○ University-wide problem? (BIO/HS/BSN students vs. other majors)
  ○ Determine/assess best approach to “fix” this

• Stimulate conversation
Questions