08/31/2012 :: Meeting

AGENDA

1. Group Introductions & Info from Brian
2. Set meeting times
3. Brainstorm ideas
4. Develop tentative plan

MEETING NOTES

In attendance:
Robert Entus
Christine Goedhart
Marci Hollenshead
Barbara Juncosa
Gloria Ramos
Louisa Villeneuve

• Brian reviewed purpose/requirements for the FIG & provided the BIO 105 FIG Report as a model
• FIG group
  • decided on meeting times and tentative dates
  • brainstormed cross-disciplinary/common student needs
  • agreed on looking at how students draw conclusions from experimental data - specifically from graphs.
    ▪ Instruction on this skill is not consistent across disciplines
  • developed a tentative plan:
    ▪ Develop a survey for students asking about previous science and math courses, what semester they are in and
    ▪ Develop an instrument to assess students' graph interpretation skills
    ▪ Look at the graph interpretation data and see what if any instructional strategies can be adopted
    ▪ Provide instruction on graph interpretation
    ▪ Re-evaluate students on graph interpretation skills
• FIG group members will bring in survey questions, graph interpretation questions and sample graphs at the next meeting
09/14/2012 :: Meeting

AGENDA

1. Review & Select Survey Questions
2. Review & Select Graph Interpretation Skills Instrument
3. Agree on survey/instrument distribution method & schedule

MEETING NOTES
In attendance:
Robert Entus
Christine Goedhart
Marci Hollenshead
Barbara Juncosa
Gloria Ramos
Louisa Villeneuve

* Prior to meeting FIG Group members submitted possible questions for 1st survey.
* Questions for survey were selected on the following topics
  * student educational backgrounds (college level math & science courses completed with "C" or better)
  * the importance of graph interpretation
  * ability to create graphs & to draw conclusions from graphs
  * a series of questions about a graph with non-science data
* Agreed to distribute survey to students by Oct 19, 2012 (based on lab scheduling)
10/19/2012 Meeting

AGENDA

1. Check progress on survey distribution
2. Check results - plan future
3. Agree on survey/instrument distribution method & schedule

MEETING NOTES

In attendance:
Christine Goedhart
Marci Hollenshead
Barbara Juncosa
Gloria Ramos
Louisa Villeneuve

• A couple of lab sections still needed to complete the first survey; that will be done by next week.
• Students seemed to do well on the graph questions - new question: is the problem with data interpretation a math issue or a science/unfamiliar context issue?
• We created a new set of questions to address this; the questions will be context specific (i.e., a bio question for bio students, a physics question for the physics students, and a chem question for the chem students)
  • questions about the second graph that were comparable to those in Survey #1 with one additional question on rates and one additional question on data point interpretation.
  • BIO questions were written by group; based on the BIO questions, the appropriate physics and chemistry questions were developed after the meeting by group members in those fields (G. Ramos and R. Entus, respectively)
• New survey to be distributed in the next couple of weeks so we can analyze & put the report together in November.
electronic update - 10/31/2012

Via email:
  Confirmation of final Survey 1 distribution.
  Confirmed creation of Excel file to compile Survey 1 data & that the file was placed on
  shared folder in catalpa for all to access.
  Check progress on Survey #2 distribution; most will be done by 11/9/2012 so set next
  meeting for that
11/09/2012 Meeting

AGENDA

1. Check progress on survey II distribution
2. Plan analysis and report writing
3. Set next meeting

MEETING NOTES

In attendance:
   Robert Entus
   Christine Goedhart
   Marci Hollenshead
   Barbara Juncosa
   Gloria Ramos
   Louisa Villeneuve

• Survey #2 was distributed to all sections except one (will be done by 11/14)
• Some Survey #2 responses still need to be added (most done by end of 11/9; then one last section by 11/14)
• We discussed what data we want to look at:
  ◦ We want to see how majors vs non-majors did on Survey #2 graphing questions (Q2, Q3, Q4, & Q5) compared to corresponding Survey #1 questions (Q12, Q13, Q14, & Q15)
  ◦ We want to see how majors vs non-majors answered Q9, Q10 and Q11 on Survey #1
  ◦ We want to compare how students answered Q1 and Q5 on Survey #2 (maybe also look at majors vs non-majors)
    ♦ note: Q1 on survey #2 is same as Q15 on survey #1
  ◦ We want to know the quantity of science course prep for majors vs non-majors
  ◦ We want to know the quantity math course prep for majors vs non-majors
• Team members (Marci, Christine & Louisa) will draft the intro and methods sections of the report; Gloria & Barbara will finish entering data; Robert will begin data analysis
• Next meeting set for 11:30am 11/16 to review conclusions
11/16/2012 Meeting

AGENDA

1. Data Analysis/Conclusions from data
2. Revise/edit Final Report Intro & Methods
3. Plan completion & revision of final report

MEETING NOTES

In attendance:
Robert Entus
Christine Goedhart
Marci Hollenshead
Barbara Juncosa
Gloria Ramos
Louisa Villeneuve

• Survey #1 Data was reviewed
  • Looked at percentage of correct graphing question responses of students grouped via number of math courses
    ▪ Percentage of correct graphing question responses for students with no math courses was significantly lower than other groups
    ▪ No significant difference in percentage of correct graphing question responses for students with one or more math courses
  • Looked at percentage of correct graphing question responses of students grouped via course
  • We believe the "majors" vs "non-majors" self-selection by students is unreliable.
  • Usefulness of graphing in everyday life (>85%) in unclear - question may need re-wording
  • Students responded that they were confident in interpreting and constructing graphs; survey results seem consistent with graph interpretation self-reporting; experiential evidence from faculty(included those asked at division meeting) suggests otherwise for graph construction - this may by a new question to probe in another FIG; possible survey questions about graph construction were discussed

• Survey #2 Data was reviewed
  • Looked at percentage of correct graphing question responses of students grouped via course
    ▪ Only real difference in Question 7; groups did worse on this question than the others
      ▪ New Questions: is phrasing slope as a "rate" confusing or is the term "rate" problematic?
    ▪ Percentage of correct Q7 responses for students in BIOL (especially BIOL 105) was significantly lower than CHEM/PHY groups
    ▪ Percentage of correct Q7 responses for students in BIOL 105 was significantly lower than other BIOL groups
    ▪ Different results for Christine's two BIOL 105 sections (consistent with what Christine has observed with students)
- Need to look at percentage of correct graphing question responses of students grouped via course and via number of math courses & see if relevant for need to add a rate type questions in future
- Need to analyze the science graph (survey 2) vs non-science graph (survey 1) responses for comparable questions.
- Need to add chem data; bar charts need to be constructed for final report.
- Minor corrections/revisions to Final Report intro & methods.
- Data & Conclusions Section of Final Report will be completed within a week or two & distributed via email to all FIG members for feedback/corrections before final submission
  - R. Entus will add the chem data, finish analysis & generate bar charts for Final Report
  - G. Ramos will draft the Data & conclusions sections of the Final Report
via email:
  Confirmation that Data & bar charts were added to Excel file on shared folder for everyone
  to review.
  Final Report draft (revised intro with new results & conclusions sections) submitted to FIG
  group for feedback.