

Evaluating and Improving Student Opportunities in a First-year Learning Community: Lifelong Learning and Career Awareness

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Presentation Overview

- **Background on first-year learning communities at WMU**
- **Co-curricular activities: lifelong learning, career awareness**
- **Project goals and scope**
- **Rubric created for evaluation of student summaries**
- **Methodology of analysis**
- **Findings and Interpretations**
- **Value of rubric**
- **Summary**

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First-year Learning Communities at WMU

- Involved 263 students in the College of Engineering and Applied Sciences in Fall semester 2005
- Groups of ~20 students were placed in a cluster (“cohort”) with 2 to 4 courses together.
- Cohorts were mentored by faculty and TAs.
- Co-curricular activities used to build connections and to develop and increase students’ awareness of STEM careers and life-long learning

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Co-curricular Activities on Lifelong Learning and Career Awareness

- Co-curricular activities were academic and social.
- Presentations: professional registration, intellectual property/patent, engineering ethics, professional behaviors in the workplace, Columbia accident investigation
- Field trips: Stryker Instrument, Dana Corp
- Social: Bowling, concerts, theatre, E-Week dinner
- Website: <http://www.wmich.edu/cas/step/Fall-2005-Activities.htm#Archive>
- Students submitted written summaries on activities

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Goals of Assessment Project

1. **Determining if career awareness and lifelong learning objectives have been met**
2. **Using results of the assessment rubric to improve future learning community activities**
3. **Using assessment of written assignments to provide guidelines to first-year students for participation in and response to the activities**
4. **Adding to an existing library of tools and rubrics used to assess student learning in professional areas, such as lifelong learning, and career awareness**

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Rubric to Assess Student Learning

(Based on Bloom's Taxonomy)

- **Four levels of learning demonstrated in students' written responses to co-curricular activities:**
 - *Level #1: Recall*
Uninterested / disinterested participation; rote response
 - *Level #2: Comprehension*
Interest expressed; acknowledges value; reported in own words
 - *Level #3: Application and Analysis*
Connection to career and lifelong learning seen; will apply information or experience; recognizes prior lack of awareness
 - *Level #4: Synthesis and Evaluation*
Will seek additional information / knowledge / opportunity to participate; may become a champion

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Methodology: Using the Rubric to Assess Learning

- 129 students summaries analyzed
- For practice evaluators (inter-raters) graded 32 summaries together.
- Graded holistically; given a number grade corresponding to the rubric:
1-, 1, 1+, 2-, 2, 2+, 3-, 3, 3+, 4-, 4
- Evaluators justified their grades by discussing quotations, phrases, and keywords that showed student's understanding of connections.

Methodology

- 97 summaries were graded independently.
- After scoring these 97, inter-raters compared grades given to each individual student.
- Inter-raters agreed completely on 42 of the summaries.
- Inter-raters agreed with slight exception, (a 2- instead of a 2, for example) on 32 summaries
- Inter-raters differed with moderate exception (a 2- instead of a 2+) on 9 summaries.
- And they differed by at least one full level (a 2- instead of a 3- or a 3) 14 times.

Methodology: Keywords/Phrases

- In justifying differences, inter-raters supported grades with students' keywords or phrases that showed/disproved synthesis.
- Category 1 summaries had no/few synthesis keywords. Ex: "That was pretty much the gist of it."
- Category 4 responses (.7% of those graded) made connections throughout.

Methodology: Keywords/Phrases

Category 2 responses often included

I enjoyed, important, I learned, interesting, good experience, helpful, I'm glad I attended, worth the time, my favorite part, and I'm thinking.
(saw some value)

Category 3 responses often included

improve, will know, will need, future, will be using this, useful, will definitely, realize, looks great on resume, will continue, and will benefit me. (much future tense used)

Findings

- 10.1% of the 97 students evaluated scored in the category 1 range (rote responses with superficial info.)
- 66.7% fell into the category 2 range (express interest or value in their own words)
- 22.5% were placed into category 3 (express lack of knowledge and intend to apply info. learned)
- .7% scored into category 4 (will seek additional info. on topic and will spread the word to peers)

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Interpretations

- The prominent level of category 2 responses might show a reluctance among first-year students to admit lack of prior knowledge and willingness to apply it in the future.
- However, it also shows that some activities were more successful than others.
- Responses to six activities were consistently placed in categories 3 and 4: The Columbia (NASA) lecture, professional registration for engineers, engineering ethics, the Senior Capstone Design Conference, student society meetings, and Engineering Opportunity Day.

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Value of Rubric

- Goal #1: to increase the awareness of first-year students about career opportunities and their future profession. (90% showed they benefited.)
- Goal #2: to improve learning communities. (Six activities have been pinpointed.)
- Goal #3: to provide better future guidelines for writing summaries (Make sure students analyze the worth of the event.)
- Goal #4: Results presented have been added to WMU lifelong learning and career assessment tool, WeBAL.

Ongoing and Future Activities

- **On-going co-curricular activities for Fall 2006 learning communities**
 - ❑ **Adjustment** – some activities are scheduled on the Main Campus because many first-year students do not own a car
- **Looking for collaborators to improve administration protocol and inter-rater reliability of rubrics**
- **Investigate use of text-mining to evaluate written summaries**

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Conclusions

- **Co-curricular activities (academic, cultural, social) can be effective in the development of 1st Year students → 90% scored at Level 2 or higher**
- **Have identified the co-curricular events that are more effective in student development**
- **Rubric contributes to the pool of assessment instruments to measure student development in career awareness and life-long learning**

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