

Infusing Undergraduate Research in Applied Science_Business_Management and Entrepreneurship

I. Infusing Undergraduate Research in Applied Science_Business_Management and Entrepreneurship

- i. MAN3025 Introduction to Management and Organizational Behavior, enrollment 120+ per section
- ii. MAN4720 Global Strategy & Policy (Capstone), enrollment approximately 28 per section
- iii. ENT4024 Entrepreneurship, enrollment approximately 30 per section
 - a. Cullen, J. G. (2011). The writing skills course as an introduction to critical practice for larger business undergraduate classes. https://eprints.teachingandlearning.ie/id/eprint/2114/1/Cullen%20JG%20The_writing_skills_course_as_an_introduction_to_critical_practice_for_larger_business_undergraduate_classes.pdf. Addressed this “focal research question: how do I encourage a class of 95 first year undergraduate students to engage meaningfully with critical writing practice such that they will be empowered to develop a deeper reflective engagement with the theories they encounter?” The challenge is to engage the students in critical thinking and effective writing beyond just teaching technical business competencies. The solution was to create and implement a specific course relating to writing with academic rigor and critical analysis, rather than integrating these capabilities into an existing course.
 - b. Elsen, M., Visser-Wijnveen, G. J., Van der Rijst, R. M., & Van Driel, J. H. (2009). How to strengthen the connection between research and teaching in undergraduate university education. *Higher Education Quarterly*, 63(1), 64-85. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-2273.2008.00411.x?casa_token=XoWKJLrRrNQAAAAA:JJxlOaXu5FJiOO6bsEnWvC7N8Cp06kE7TuZcrAnNjK3xiGPhapL28bEj5KKGZmvHDLyPgIHUMiXuLuqY This paper suggests that faculty enjoy including research as a component of their teaching, which in turn increases job satisfaction. Students who were involved in the research process similarly enjoyed the courses more, found them more relevant, and became more engaged with the material. Multiple examples of how coursework can be (1) “Research-led” (2) “Research-tutored” (3) “Research-based”, and/or (4) “Research-oriented”. For business classes that are students as participants with an emphasis on using research to understand processes and solve problems, the latter method is preferred and includes methods such as field studies and interactive course activities.
 - c. Singh, P., Guo, H., & Morales, A. (2015). A research-based development economics course for undergraduates. *The Journal of Economic Education*, 46(3), 274-284. Students in the class (1) learn the concepts of the course (2) read, discuss, and present on existing literature relating to the content, and (3) prepare original research on the course material by asking critical questions and looking deeper to find creative solutions.
 - d. The following article is also of interest, but is specifically geared towards smaller, liberal arts programs. Perhaps this would be instructive for the FAU Honors College: Butcher, K. F., & Weerapana, A. (2017). Striving to involve undergraduates in economic research at Wellesley College. *The Journal of Economic Education*, 48(4), 295-300.

II. Research-Based Course Activities

MAN3025 (Introduction to Management & Organizational Behavior; 120+ students):

- Level of Research Activity: **Exposure**
 - while these students are juniors so should have some general familiarity, there is a great deal of material to cover so that they have a grounding for future classes
- Course Activities and Assignments
 - **Formulate questions:**
 - I already use the <https://www.packback.co/> platform to require students to identify questions about the material covered in class and/or other areas of interest relating to Management.
 - I will help them formulate these general questions into research questions by giving examples (and having them provide their own) and discussing how they could be directed into research
 - **Critical Thinking:**
 - For certain assignments, e.g., the Bias Codex https://upload.wikimedia.org/wikipedia/commons/6/65/Cognitive_bias_codex_en.svg, students will recognize gaps between our interpretation of information and how there can be misperceptions
 - **Skill Building**
 - students must recognize and examine limits of our capabilities to analyze information

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- I also use “The Media Bias Chart” <https://adfontesmedia.com/interactive-media-bias-chart/> to discuss the importance of evaluating source material and describe differences of the same facts but with different analyses
- Students interested in a comprehensive research paper, instead of a more traditional method of being assessed for this course (i.e., exams and shorter assignments), would engage in **skill building** for all of these components resulting in a poster deliverable

MAN4720 (Global Strategy & Policy; 28 students):

Skill Building

- this is a Capstone class for Management majors, so they have been exposed to many concepts, but still do not have a solid grounding in Strategy. However, they are all seniors, typically in their last semester, so should be able to analyze and apply concepts
- I would seek to have this class bifurcate into those who are seeking a more traditional structure and take volunteers, particularly those interested in going to graduate school, to have a research paper as a significant portion of their grade
- Course Activities and Assignments:
 - **Knowledge:** Students must demonstrate information literacy regarding a topic that they will want to evaluate for their paper
 - I already have students write a brief (approx. 3-page) paper on anything of interest
 - **2) Formulate questions:**
 - For those who want to write a larger paper, they must break down the research questions into manageable units in order to constrain the paper to address and examine limits
 - **3) Critical Thinking:**
 - The paper will be not only to interpret information and results, but also to progress into the “**intensive**” research activities of how to **formulate questions** by composing logical arguments and engage in **critical thinking** by justifying conclusions (e.g., what the CEO should have done)

III. Assessing Undergraduate Research and Inquiry Activities

Use a bulleted list to describe how the research-based course activities will be assessed in your course.

- Assessments integrated with above-mentioned activities
 - For research-based activities (if elected by the student):
 - For a poster presentation (which would need to be presented to the FAU community), I would assign at least 40% of the grade, with the remainder on textbook assignments & exams

IV. Additional Resources

This is a place to share resources so your colleagues do not have to reinvent the wheel, at least not from scratch. Use a bulleted list to describe the resource and attach lectures, forms, products, etc., you may have developed to teach the research process, describe a specific research/inquiry project, etc.

- **Faculty Resources**
 - Let students decide whether they want to do a research project vs. traditional lecture assessment (i.e., short assignments, quizzes, and exams)
 - one issue is how to assess a large/diverse amount of information but only have a paper as a deliverable
 - Consider a pre-set list of research questions (as Lincoln suggested) as a starting point
 - Some students may be interested in learning more about research, and perhaps would like to develop this skill to eventually present at conferences and symposia
 - For entrepreneurship, is a research paper a more appropriate learning outcome than creating a business and other experiential exercises?
- b. Some insight in allowing students to choose their own grade, e.g., <https://www.chronicle.com/newsletter/teaching/2020-01-30> or their own assignments, e.g.,

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<https://sites.gsu.edu/lessonslearned/2020/11/05/pros-cons-of-assigning-students-to-choose-their-own-adventure/> and https://www.pdnet.org/aaptstudies/content/aaptstudies_2019_0005_0068_0088 (letting students select assignments from a “menu”)

- The efficacy of writing assignments in business courses as appropriate learning outcomes has been explored (e.g., Zhu, W., 2004. Writing in business courses: An analysis of assignment types, their characteristics, and required skills. *English for Specific purposes*, 23(2), 111-135), but not necessarily in great detail.
- Experiential exercises, such as the Marshmallow Challenge: https://www.ted.com/talks/tom_wujec_build_a_tower_build_a_team?language=en provides engagement, but may not result in a research project that could be presented at any level.

○ Student Resources

▪ Relating to ENT4024

Students will gain knowledge of the process of entrepreneurial thinking, that follows the scientific process.

- They will formulate questions (e.g., what is a potential customer problem, what are possible solutions), and generate hypotheses to test the validity of their assumptions. They will gather data by speaking with prospective customers and either pivot or remain on their plan of action to create a business. Throughout this process, they must engage in critical thinking to avoid confirmation bias and entrepreneurial overconfidence.
 - Sarasvathy, S. D., & Venkataraman, S. (2011). Entrepreneurship as method: Open questions for an entrepreneurial future. *Entrepreneurship theory and practice*, 35(1), 113-135.
 - Duening, T. N., & Metzger, M. L. (2014). The Entrepreneurial Method: As the Foundation of Entrepreneurial Expertise. *American Journal of Entrepreneurship*, 7(1).

V. **Contact William “Patch” Paczkowski (WPaczkowski@fau.edu) for additional information about this course/discipline area.**