

ABSTRACT

Experiential learning is increasingly a goal in higher education. Reflection, an important component of experiential learning, facilitates processing and understanding. We propose using the typical research paper from experimental psychology courses as an experiential learning requirement, and including a reflection component. We present data from students evaluating this project.

Higher education has placed greater emphasis on experiential learning in recent years (Roberts & Welton, 2022). Experiential learning provides students with opportunities to explore activities, interests, and projects that result in a broader self-understanding of skills, values, and the world around them (Association for Experiential Education). One component considered essential to experiential learning is reflection (Reflection Toolkit, 2018). Reflection enables students to think about what they are doing and experiencing to facilitate processing and understanding. One potential issue with reflection is the lack of students' knowledge on the specific skills that are being developed.

Experimental psychology courses center primarily around research methodology. Typically, students conduct a research project and write the results in APA style. Such a project could be used as part of an experiential learning requirement. What may be missing from the traditional project is a reflection component. We created a reflection component for such courses. Students were asked to recognize specific skills psychology students develop through the process of doing the experimental paper from the list created by Naufel et al, (2018). They were also given a more general survey on experiential learning developed by Clem, et al (2014) that looks at utility, environment, active, and relevance. Face to face students reported a somewhat higher degree of relevance for the characteristics measure by Clem et al (2014); the online students reported a somewhat higher degree of relatability to the Naufel, et al (2014) skill set.

This survey would be useful in a larger class setting where grading individual reflections might be challenging. A future direction for this study would be to examine how reflections might improve by giving students the survey first. Cognitive research shows the links many not be clear for novice learners. The goal is to facilitate comprehension of application of these activities, consistent with existing research.

Graphs Blue is F2F and Orange is OL 3600 students

Survey completed for extra credit after they turned in the paper (and the idea was to reflect on the paper process).

70 F2F and 36 OL – I treated both classes the same (same activities)

I think if we are going to do this experiential learning we need to make sure our students are really understanding more how this all applies (beyond just our outcomes). Cognitive research shows that if the links are not made for novice learners, they do not automatically form the link

Gick, M. L. & Holyoake, K. J. (1980). Analogical problem solving. *Cognitive Psychology*, 12, 306-355.

Fortress/Brain tumor problem – learn about 1 but problems applying it to the other (on surface not look similar).

Perfetto, G. A., Bransford, J. D., & Franks, J. J. (1983). Constraints on access in a problem-solving context. *Memory & Cognition*, 11, 24-31.

Give people answers to questions but do not tell them these are the answers, people do not use that information.

Inert vs conceptual literature

Association for Experiential Education. <https://www.aee.org>

Clem, J. M., Mennicke, A. M., & Beasley, C. (2014). Development and validation of the experiential learning survey. *Journal of Social Work Education*, 50, 490-506. <https://doi.org/10.1080/10437797.2014.917900>

Kolb, D.A. (1984). *Experiential learning: experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.

Naufel, K. Z., Appleby, D. C., Young, J., Van Kirk, J. F., Spencer, S. M., Rudmann, J., ...Richmond, A. S. (2018). The skillful psychology student: Prepared for success in the 21st century workplace. Retrieved from: <https://www.apa.org/careers/resources/guides/transferable-skills.pdf>

Reflection Toolkit (2018). <https://forumea.org/wp-content/uploads/2018/04/ST-Reflection-Toolkit.pdf>

Roberts, J., and Welton, A. (2022). The ten commandments of experiential learning. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/advice/2022/08/03/foundational-best-practices-experiential-learning-opinion>

General reflection survey – it has 4 subscales.

Clem, J. M., Mennicke, A. M., & Beasley, C. (2014). Development and validation of the experiential learning survey. *Journal of Social Work Education, 50*, 490-506.

<https://doi.org/10.1080/10437797.2014.917900>

1-5 Environment (alpha .680)

6-12 Active (alpha .854)

13-21 Relevance (alpha .93)

22-28 Utility (alpha .879)

Stratified alpha .954 and final alpha .947

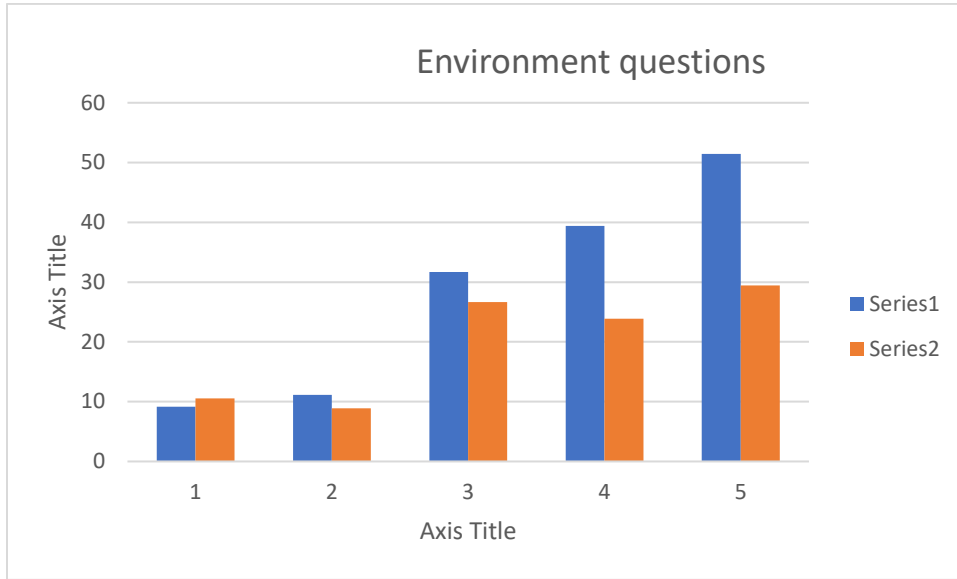
1. The setting where I learn helps me understand the material better.
2. I expect real-world problems to come up during this learning experience.
3. The environment I learn in does not enhance the learning experience. RS
4. The learning experience requires me to interact with people other than students and teachers.
5. I expect to return to an environment similar to the one where this learning experience occurs.

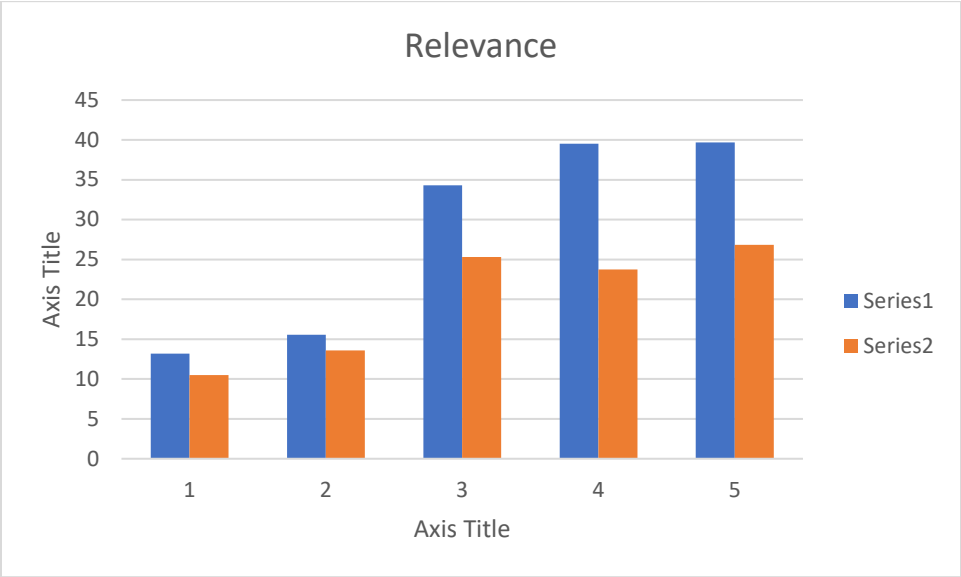
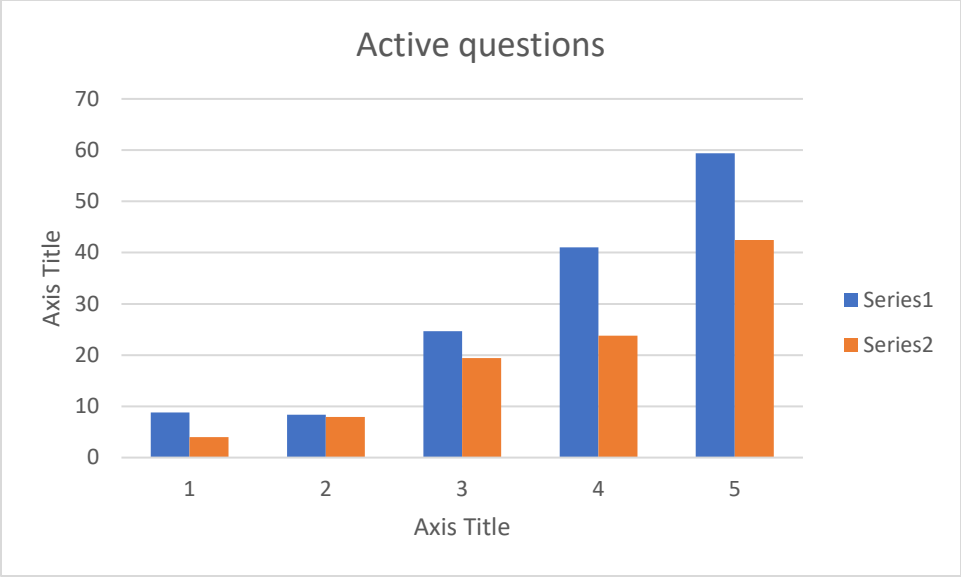
6. I am stimulated by what I am learning.
7. The learning experience requires me to do more than just listen.
8. The learning experience is presented to me in a challenging way.
9. I find this learning experience boring. RS
10. I feel like I am an active part of the learning experience.
11. The learning experience requires me to really think about the information.
12. I am emotionally invested in this experience.

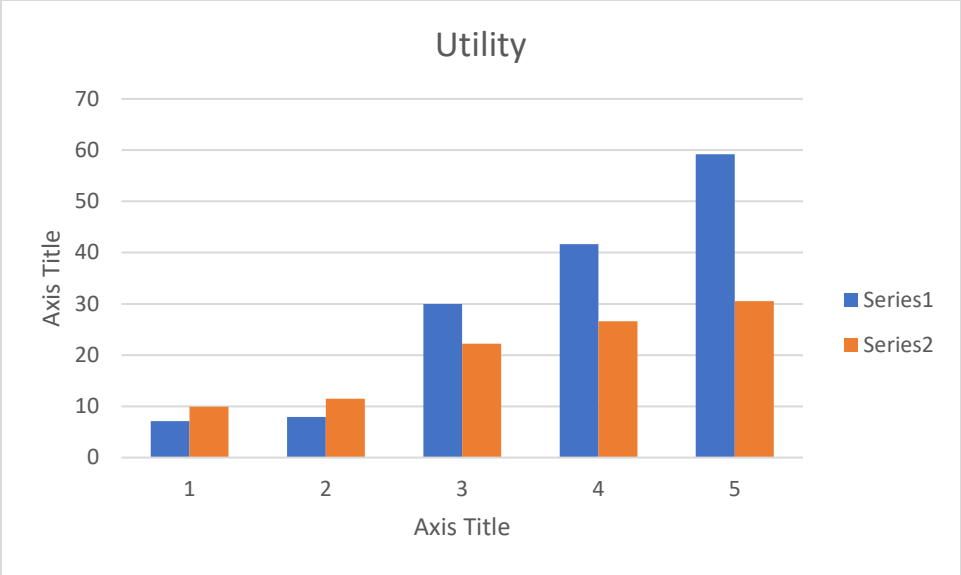
13. I care about the information I am being taught.
14. The learning experience makes sense to me.
15. This learning experience has nothing to do with me. RS
16. This learning experience is enjoyable to me.
17. I can identify with the learning experience.
18. This learning experience is applicable to me and my interests.
19. My educator encourages me to share my ideas and past experiences.
20. This learning experience falls in line with my interests.
21. I can think of tangible ways to put this learning experience into future practice.

22. This learning experience will help me do my job better.
23. This learning experience will not be useful to me in the future. RS
24. I will continue to use what I am being taught after this learning experience has ended.

- 25. I can see value in this learning experience.
- 26. I believe this learning experience has prepared me for other experiences.
- 27. I doubt I will ever use this learning experience again. RS
- 28. I can see myself using this learning experience in the future.







The list of skills psychology majors (students in general) develop – we need some way to maybe ensure students realize that these are skills they need to remember they developed (so some opening paragraph in our survey)

Naufel, K. Z., Appleby, D. C., Young, J., Van Kirk, J. F., Spencer, S. M., Rudmann, J., ...Richmond, A. S. (2018). The skillful psychology student: Prepared for success in the 21st century workplace. Retrieved from: [https:// www.apa.org/careers/resources/guides/transferable-skills.pdf](https://www.apa.org/careers/resources/guides/transferable-skills.pdf)

Analytical thinking: Solve complex problems, attend to details, plan proactively, and display comfort with ambiguity.

Critical thinking: Display proficiency with statistics, program evaluation, and research design necessary for the study of social and technical systems.

Creativity: Use innovative and resourceful approaches to problem solving and new tasks.

Information management: Be adept at locating, organizing, evaluating, and distributing information from multiple sources.

Judgment and decision making: Engage in logical and systematic thinking and ethical decision making when considering the possible outcomes of a particular action.

Oral communication: Demonstrate strong active listening and conversational abilities in both informal and professional environments, as well as an aptitude for public speaking and communicating scientific information to diverse audiences

Written communication: Comprehend relevant reading materials to produce professional documents that are grammatically correct, such as technical or training materials and business correspondence.

Adaptability: Adjust successfully to change by responding in a flexible, proactive, and civil manner when changes occur.

Integrity: Perform work in an honest, reliable, and accountable manner that reflects the ethical values and standards of an organization.

Self-regulation: Manage time and stress by completing assigned tasks with little or no supervision; display initiative and persistence by accepting and completing additional duties in a careful, thorough, and dependable manner.

Collaboration: Work effectively in a team by cooperating, sharing responsibilities, and listening and responding appropriately to the ideas of others.

Inclusivity: Demonstrate sensitivity to cultural and individual differences and similarities by working effectively with diverse people, respecting and considering divergent opinions, and showing respect for others.

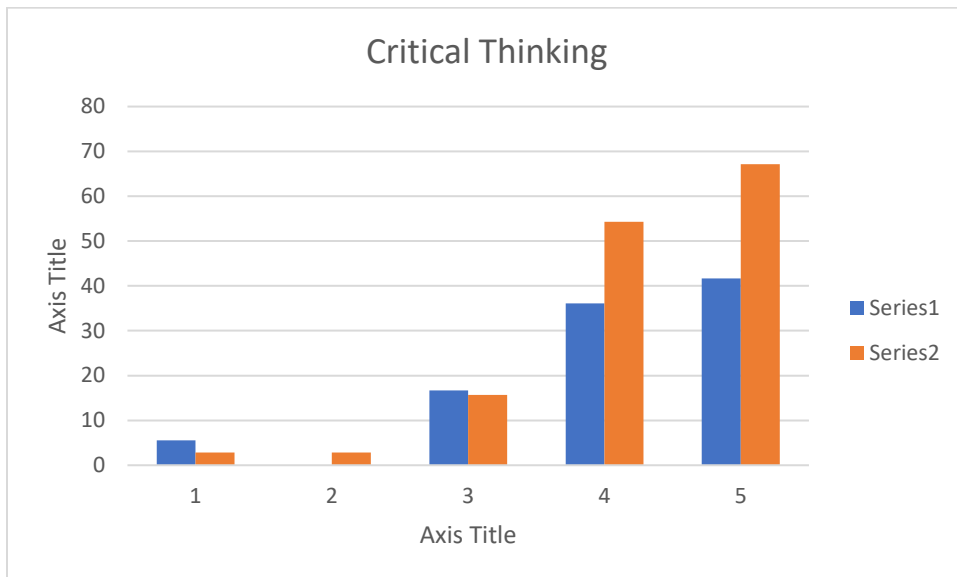
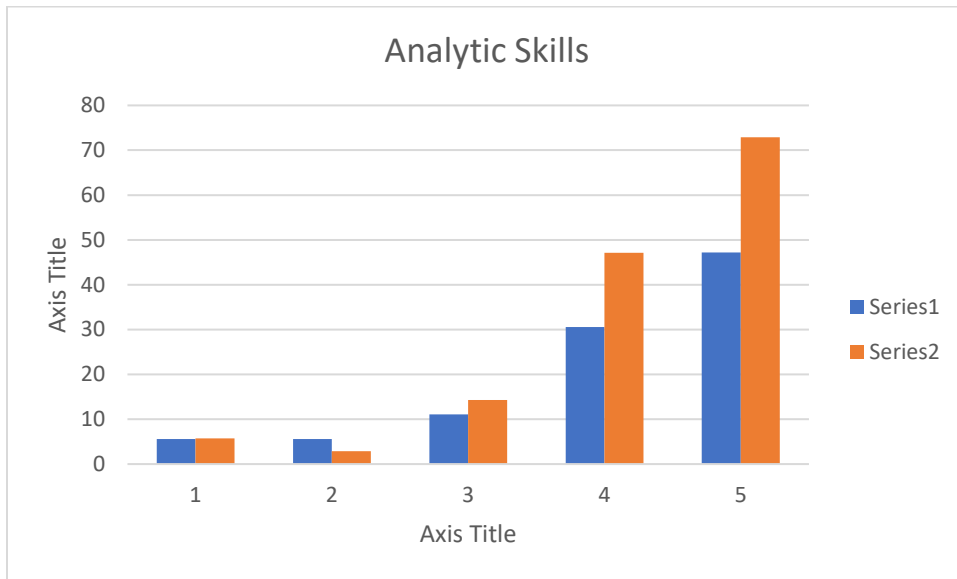
Leadership: Establish a vision for individuals and for the group, creating long-term plans and guiding and inspiring others to accomplish tasks in a successful manner.

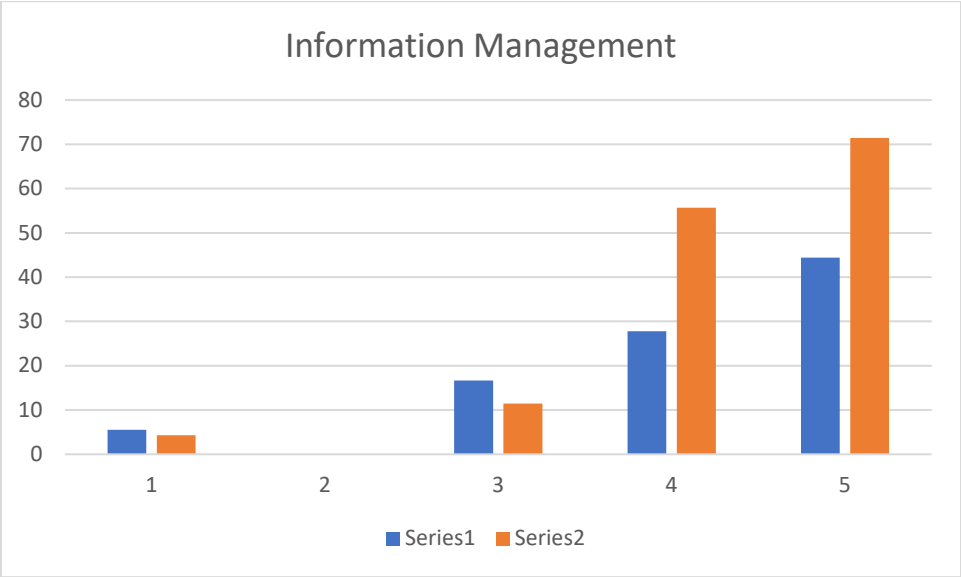
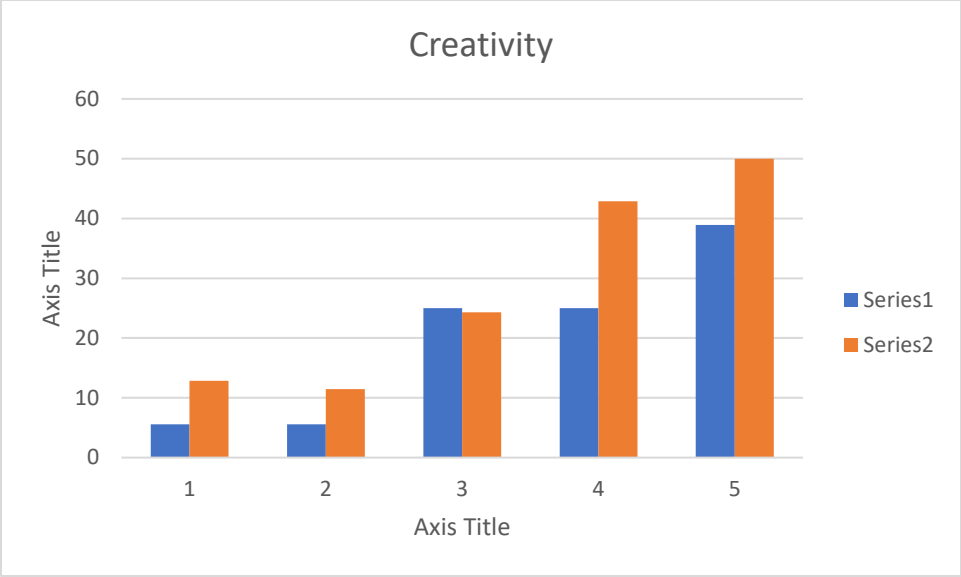
Management: Manage individuals and/or teams, coordinate projects, and prioritize individual and team tasks.

Service orientation: Seek ways to help people by displaying empathy; maintaining a customer, patient, or client focus; and engaging in the community.

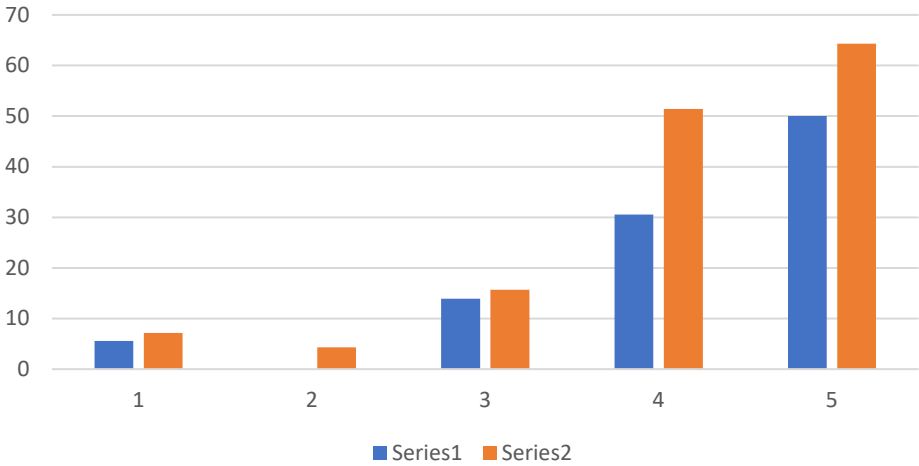
Flexibility/adaptability to new systems: Be willing and able to learn and/or adapt to new computer platforms, operating systems, and software programs.

Familiarity with hardware and software: Demonstrate competency in using various operating systems, programs, and/or coding protocols; troubleshoot technical errors; and use software applications to build and maintain websites, create web-based applications, and perform statistical analyses.

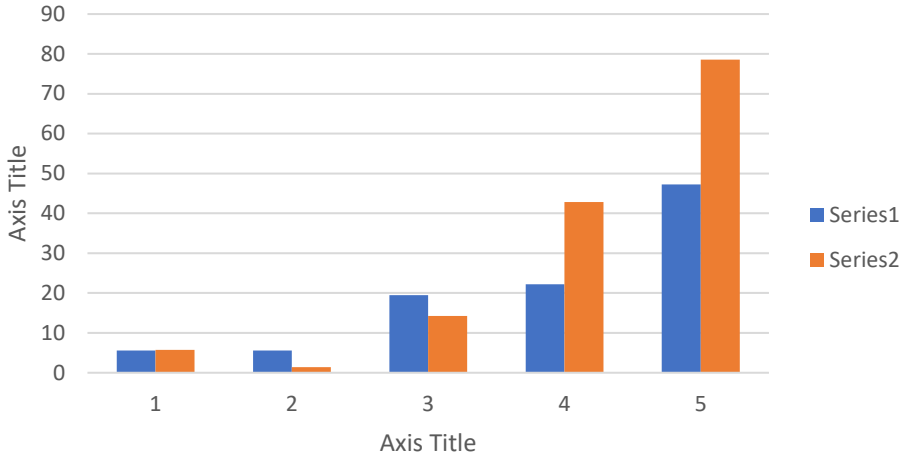


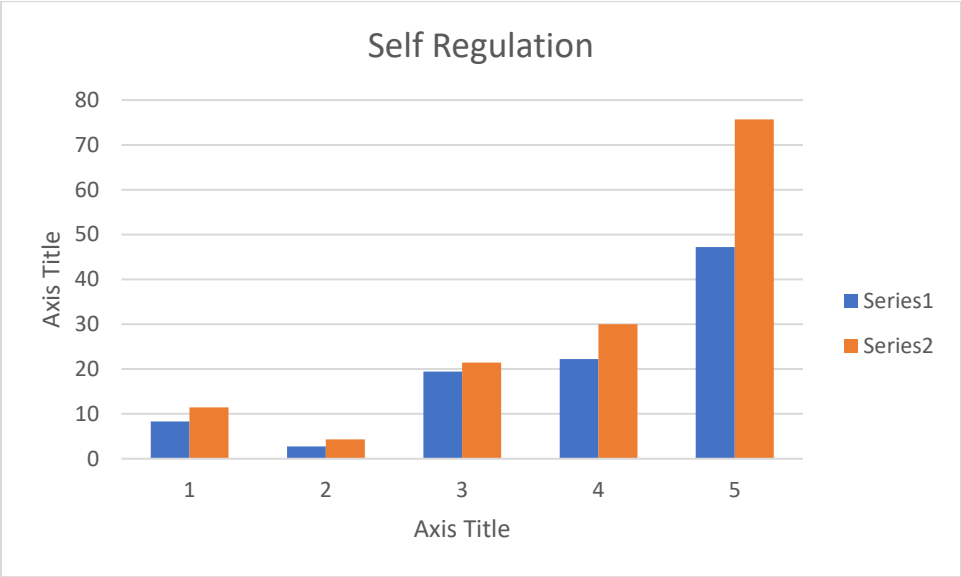
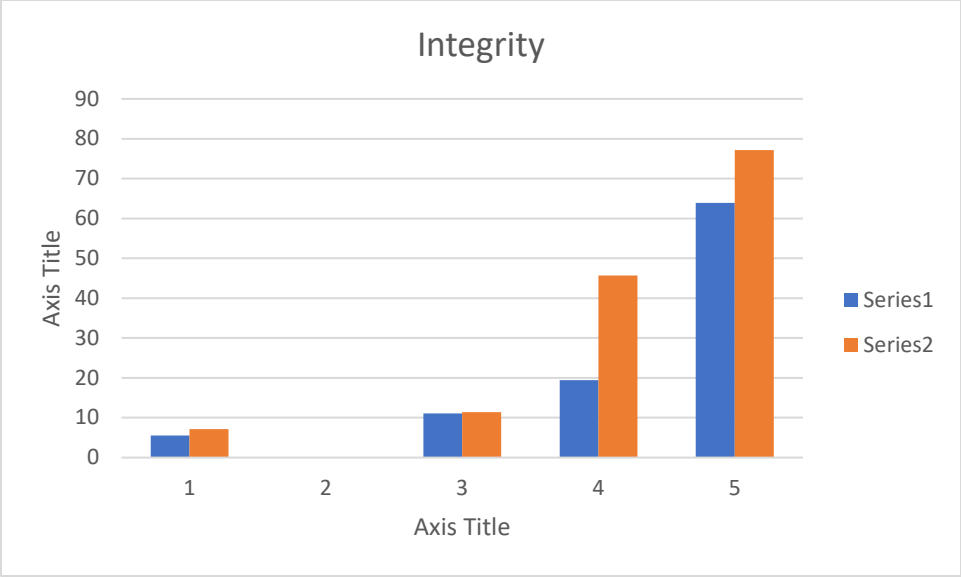


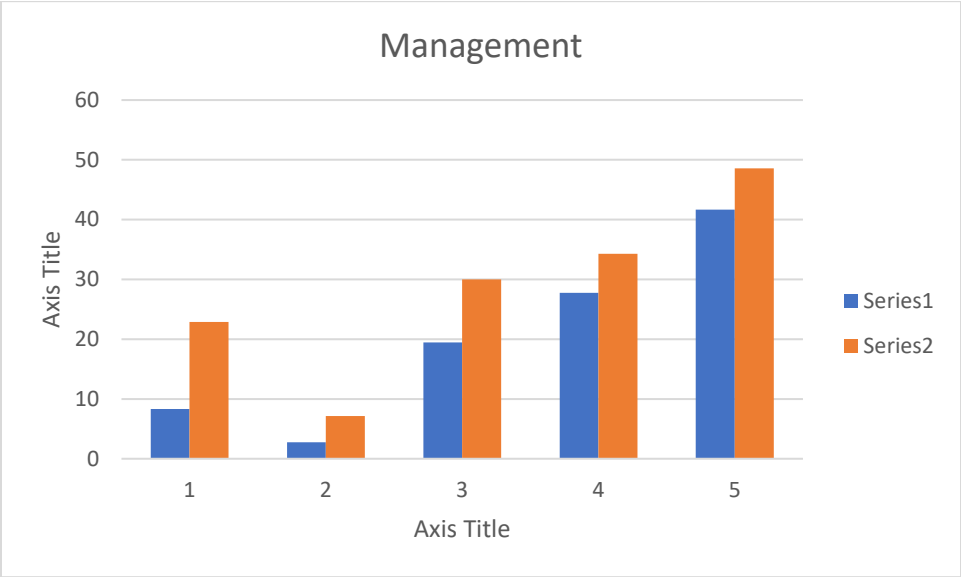
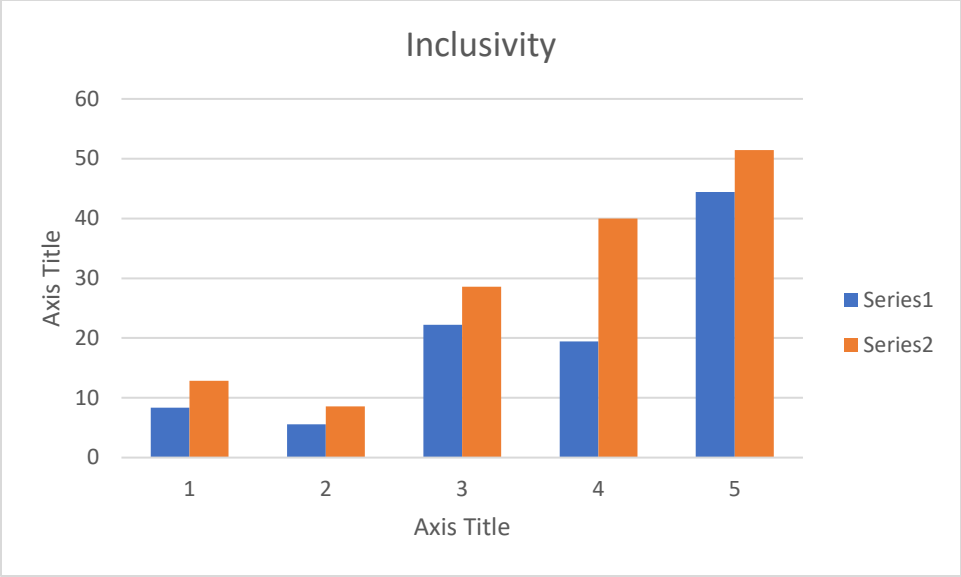
Judgment/Decision mkaing

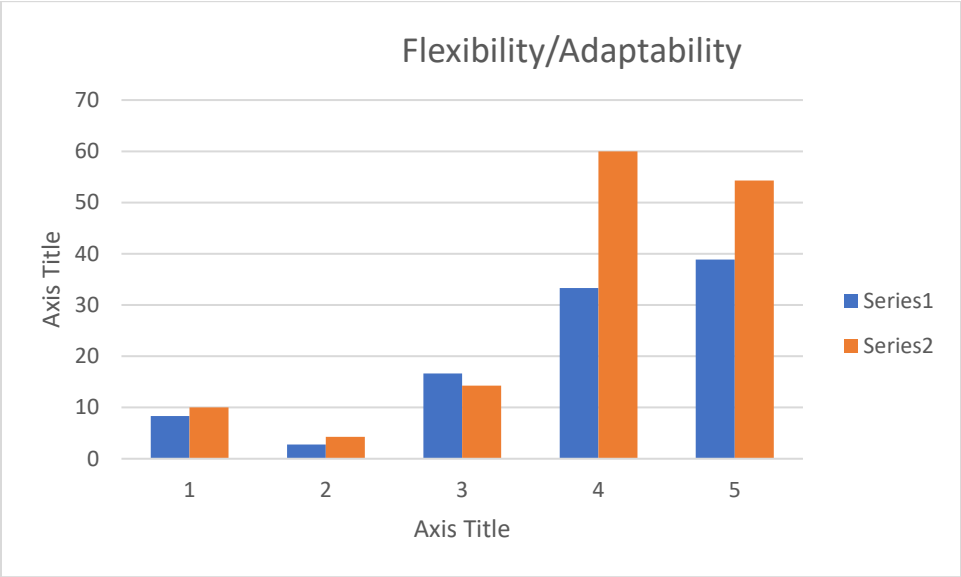
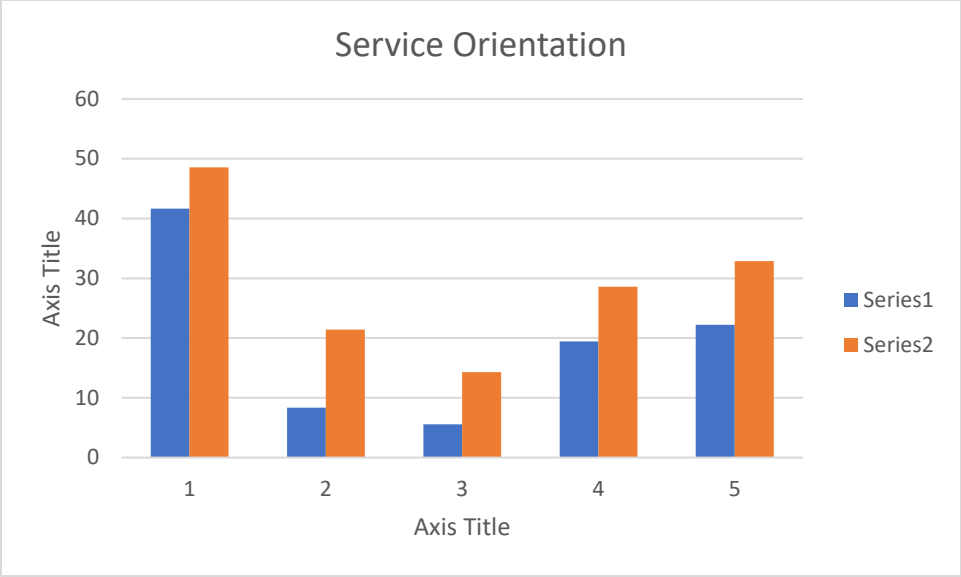


Written Communication









Familiarity with Hardware/Software

