

Family Science Review



Journal: https://www.familyscienceassociation.org/journal/

Research Methods and Statistics Courses in Family Science: Instructional Practices in the Times of a Pandemic

Mamta Saxena

Cite this article (APA 7):

Saxena, M. (2022). Research methods and statistics courses in family science: Instructional practices in the times of a pandemic. *Family Science Review*, 26(1). http://dx.doi.org/10.26536/WSNS2187

Published online: 20 April 2022 Submit your article to this journal

Instructional Practices in the Times of a Pandemic: A Review of Methods Courses in a Human Development Department

Mamta Saxena, Ph.D.

State University of New York

ABSTRACT: Despite the importance of scholarship in Human Development and Family Sciences, many students and professors are unenthusiastic about Research Methods and Statistics courses. This article will first, identify issues that deter optimal teaching and learning in the research methods courses and then engage in a reflective discussion of effective instructional practices in research methods and statistics courses during COVID-19.

Keywords: Research methods, statistics courses, Family Science, instructional practices

Acknowledgments: I am thankful to Dr. Dorothy J. Shedlock, Associate Professor, Chair, Department of HDV at SUNY Oswego, for her vision and support in initiating standardization of research methods courses. I am also thankful to Dr. John Kane, Director, Center for Excellence in Learning and Teaching, for coordinating several workshops on course redesign and effective practices in online teaching. Dr. Kane and the workshop facilitators offered several thoughtful ideas to strengthen the courses and the current manuscript

Direct Correspondence to Mamta Saxena, PhD, Associate Professor, Department of Human Development, SUNY, Oswego, NY, 13126;

Email mamta.saxena@oswego.edu; Telephone: 315- 312-5518

Research Methods and Statistics Courses in Family Science: Instructional Practices in the Times of a Pandemic

Scholarship, inclusive of research, statistics, and writing, is a vital ingredient of any scientific field of study. In Human Development and Family Sciences (HDFS), scientific literacy through both reasoning and presenting ideas to diverse audiences promotes critical thinking and constructs deeper insights into understanding developmental processes and outcomes. Thus, "The scholarship of discovery is at the core of family science--without research, we would be left with myths, biases, and folk tales about families and family relationships." (Ganong et al., 1995, p. 502).

HDFS departments across the US have consistently recognized the development of scholarship to be a vital skill for family science scholars. Accordingly, undergraduate students are expected to enroll in research methods courses to learn about research tools, data collection, analysis, and dissemination of findings to diverse audiences. Per contra, many undergraduate students hesitate to enroll in methods courses despite career trajectory relevance (Elliott et al., 2013). Likewise, many faculty members, especially junior faculty, consider teaching quantitative courses detrimental to their career goals regarding promotion, retention, tenure, and merit pay. Moreover, there is ample evidence to suggest that the Student Evaluation of Teaching (SET) ratings of quantitative courses are significantly lower than non-quantitative or conceptual courses as students are more likely to be dissatisfied with the professors of methods courses than other courses (Uttl & Smibert, 2017).

The spread of COVID-19 further exacerbated student-instructor disinclination and dissatisfaction in methods courses. As a safety measure, COVID-19 prohibited face-to-face learning and propelled the need for teaching in asynchronous, hybrid, or synchronous online format. Although online learning was the most promising alternative, it took a heavy toll on both students' and instructors' mental health, lifestyle-related outcomes, academic performance, and instructor-student relationships (Hasan & Bao, 2020; Son et al., 2020). In addition, some students delayed graduation, took a gap year, withdrew from classes, and changed majors (Aucejo et al., 2020). Given the importance of research methods courses in HDFS, a discussion on engaging students in these courses, especially in an online format, is warranted. Undoubtedly, COVID-19 has catalyzed the importance of best practices in online courses. Nevertheless, the discourse is not new and has always had implications for students' academic outcomes and faculty professional development regardless of the course content and pandemic.

For this review, I will begin with a brief background of the methods courses requirements in the Human Development (HDV) department at SUNY Oswego, followed by descriptions of faculty members' and students' issues that prevented optimal teaching and learning pre-COVID-19. Then I will provide a brief overview of the standardization of methods courses in the department. In the end, I will reflect on my experiences with online instructional practices and resources during COVID-19 and discuss effective ways to enhance student-learning outcomes in methods courses. Please note that descriptions of faculty issues were collected through informal conversations during faculty meetings and course standardization meetings. Student narratives are based on their feedback on students' evaluations of teaching (SETs) of my courses and notes taken during my advising meetings with them.

Background: Research Methods and Statistics in HDV, SUNY Oswego

The department of HDV at SUNY Oswego consists of approximately 350 undergraduate students. Out of 350 students, about 85% are HDV majors; the rest are HDV minors. HDV majors complete three methods courses (in a sequence) to graduate with an HDV degree, whereas minors complete the first method course from the sequence. All three courses are 4-credits each; all require research and statistics, are writing-intensive, and integrate a laboratory component. The enrollments in these courses are capped at 19 students per course.

Course #1 - Research methods in HDV I - fosters an understanding of scientific methods in behavioral sciences and data analysis techniques, and writing of literature reviews and scientific reports. Course #2 - Research methods in HDV II offers opportunities to apply and analyze conceptual knowledge of course #1. Thus, students conduct a small quantitative study on a topic of their interest, write a research paper, and present their empirical findings. Course #3 - Research Designs and Applications in HDV fosters designing and scientific evaluation of an intervention program.

Issues in Methods Courses

As stated earlier, descriptions of faculty issues were collected through informal conversations during faculty meetings and course standardization meetings. The students' narratives are based on students' evaluations of my courses' teaching (SETs) survey. The survey consisted of 29 questions on pedagogy and content quality. The students respond to a 5-point rating scale ranging from "agree to disagree." An example of an item from the SETs is, "The instructor enhanced student learning."

Additionally, in SETs, there are three qualitative questions. The qualitative questions seek descriptions of strengths and weaknesses of the course and course instructor and suggestions to improve the course. The following descriptions of student issues are based on the qualitative part of my SET surveys from 2016 to 2019. Please note that thematic analysis of the qualitative data is beyond the scope of this paper, and only the most common findings with implications for teaching and learning in Course#2 are presented below.

Student Issues

Students faced several issues in methods courses-ranging from lofty course objectives to writing intensively for assignments. In their opinion, "they are learning a new language" and, therefore, need more repetition, assessment, and individualized feedback. As stated above in the learning outcomes of courses #s 1 and 2, students are expected to understand concepts, make conceptual connections, decide the use of measure and design, apply developmental theories underlying processes, state the constraints and limitations of statistical inference, and be able to interpret findings. In addition to unrealistic course objectives, students reported that their poor mathematical background, inability to grasp abstract and banal content, and lack of understanding of content relevance, laden with dry and long data analysis and writing processes, cumulatively impacted their motivation and performance. Besides the lack of clarity on the writing processes and understanding of common writing issues among students, difficulty in distinguishing between various sections of the paper and other personal academic problems led to student frustration and low academic scores. To combat these issues, students suggested

deductive classroom activities on reading, writing, and APA format in other courses to have a solid foundation before taking methods courses.

The above student responses concur with empirical findings. Empirical research suggested a downward trend in student writing proficiency (Carter and Harper, 2013). Students get frustrated with the idea that research, statistics, and writing are not linear processes and require systematic planning, organizing, drafting, reviewing, editing, reorganizing, and rereviewing (Galvan & Galvan, 2017). Thus, all students repeatedly need motivation, reassurance, and individualized feedback to develop formal-conceptual understanding.

Instructor Issues

The dissatisfaction with courses was equally rampant among faculty members, and they often discussed below-par student performance and their own anxieties with lower SET ratings. Each instructor executed the course requirements differently to cope with the above-listed issues, resulting in inconsistent knowledge and skills in later courses in the sequence. Differential instructor effects can also be attributed to the fact that not all instructors teach Course #s 1, 2, and 3. Thus, instructors who only teach Course #s 1 or 2 in the sequence were incognizant of the details of future course requirements. Similarly, Course #3 instructors who do not teach 1 and 2 did not have realistic expectations. As a result, both sets of instructors inadvertently emphasized different concepts, resulting in a marked discrepancy in students' academic success in future courses and knowledge base.

To illustrate a few examples of instructional inconsistencies, some professors emphasized probability and physiological measures and expected students to calculate by hand. On the contrary, other professors preferred to use only SPSS (https://www.ibm.com/products/spss-statistics) and focused more on behavioral measures. Similarly, different professors emphasized the APA style differently, resulting in students of different sections being underprepared for some topics and over-prepared for others.

PreCOVID-19 and Standardization of Methods Courses

To preempt instructional consistencies and instructor effects, courses #1 and 2 were standardized in Fall 2017. The meetings led to the finalization of each course's depth and breadth, streamlining teaching practices, and integrating common exams into Courses #s 1 and 2 to assess students' ability to succeed in Course #3. Additionally, to ensure equal emphasis on writing (paper/project writing), statistics (lab), and research methods (theory), each component was weighted equally, i.e., worth 20% of the grade. Overall, the three components contributed to 60%; final exams contributed to 25%, and the remainder 15% of the grade was left at instructor discretion. To add rigor, students must pass all three components and the final exam to pass the course.

The above revisions led to positive changes in students' knowledge base and foundational skills in behavioral sciences. In the most recent meeting on revisiting standardization procedures of methods courses (Nov 2019), faculty noted positive changes in students' papers and grades. Nevertheless, faculty members also felt overburdened with the grading and providing feedback on the assigned work. In an ideal situation, if the courses are taught as intended, it can result in a grading of 30-40 low stake (including participation activities) and 15-18 medium to high stake

assignments (including drafts of various sections of the research paper, data analysis worksheets and more). It was suggested that peer review activities, hiring teaching assistants who are prior students of the course, and frequent verbal feedback during in-class sessions can lower some of the grading burdens and deescalate stress.

COVID-19 and Research Methods and Statistics Courses- Spring 2020

Similar to Hasan & Bao (2020), Son et al. (2020), and Aucejo et al. (2020), HDV faculty noted that all courses, especially methods courses, were negatively impacted (Faculty meetings, Spring 2020). Methods courses require the simultaneous use of a projector, whiteboard, data analysis software such as SPSS, and templates and worksheets. Both professors and students faced initial accessibility issues to these resources. Almost all professors in HDV chose an asynchronous teaching style with flexible due dates. Many posted handouts and assignments online, while others, including myself, posted lecture videos utilizing Screencast-O-Matic (https://screencast-o-matic.com/) - a screen and video capture software to record classroom lectures. Screencast-O-Matic offered an inexpensive video creation medium. The videos could be slightly edited, integrated with texts, shapes, images, & music, participation, and homework assignments and if posted on YouTube, the auto-captions tool provided closed captioning.

I noted that the Screencast-O-Matic videos were helpful as students could watch the explanation of a complex concept an infinite number of times at their own pace; however, the asynchronous mode failed to engage students and provide enough structure for timely submission of assignments and projects. At the end of the semester, compared with the previous years, the average class grade in my course went down by two grades, and despite announcements and reminders, a significant number of students did not respond and only passed because grading included consideration for COVID-19 hardships.

The poor student performance and motivation spurred me to search for effective learning and teaching practices for Fall 2020. Therefore, I attended several workshops on effective practices in online teaching conducted by the Center for Excellence in Learning and Teaching, SUNY Oswego. My past experiences of teaching methods courses and training in university teaching and current workshops on effective online teaching practices culminated in the strategies and associated reflections which are given below for Course #2 taught in Fall 2020.

Effective Instructional Practices for Methods Course 2 – Reflections Fall 2020

Modality – Online synchronous (OY) vs. asynchronous (AY) vs. hybrid (H).

One of the pivotal decisions before teaching methods courses was to decide the modality. All modalities have their strengths and weaknesses that are influenced by available teaching and learning resources. Briefly, OY courses occur in real-time through Zoom, Google Meet, and other similar conferencing tools. Therefore, OY courses offer greater structure and active engagement with immediate feedback among all group members. OY courses further sustain belongingness to a course, resulting in fewer misunderstandings and lower feelings of isolation. However, scheduling challenges, working/balancing family responsibilities, outdated devices, unreliable/weak Wi-Fi networks, shared/awkward spaces, and background noises may deter students from attending OY courses or active engagement. AY provides temporal flexibility, inclusivity, significant opportunities for review, and Zoom exhaustion relief. However, AY

requires self-control, discipline, and self-directed learning. As a result, students may feel disconnected from the instructor, course material, and peers and may fall through the cracks. A hybrid course combines both synchronous and asynchronous learning modes and offers flexibility and structure (Brady & Pradhan, 2020; Lin, Xi, & Gao, 2020; Nieuwoudt, 2020).

In Course #2, I chose OY delivery through Zoom. To maximize OY's merits, all class sessions integrated the 4-step model (see figure 1) and recordings were posted on Blackboard for later student review. The session recordings proved advantageous as I received fewer student emails and requests to repeat the same content than in previous years. The student feedback on my teaching evaluation (SET) reports of Fall 2020 indicated that the participation activities (see step 3 below) kept students engaged and actively thinking during sessions; the recorded sessions helped them go back to the topics they wanted to review at their own pace, deliberate, and pique their interest for the next class.

Syllabus and Content Accessibility Sets the Tone

Like many, as a course instructor, I tended to focus more on coursework than the syllabus. Although the syllabus was discussed with follow-up activities, the lower emphasis on the syllabus may have inadvertently undermined the importance of the inclusivity and content accessibility issues. Notably, the impressions of the first day of class can potentially encourage students to build a better relationship with the course instructor. Thus, even if students are anxious about the content and their poor foundational background, supportive language and tone in the syllabus and discussion of the syllabus can gently remind them about the resources and content relevance. All the above may further encourage students to read their syllabus, which is a common complaint of faculty members (Frey et al., 2021).

Bain (2004), known for his ideas on promising syllabus, recommended all instructors to go beyond mandatory syllabus requirements by presenting information in a student-centered language that is welcoming and written in conversational style and tone. He further advocated using promises and opportunities in the syllabus instead of requirements to purge a stern and legal tone. Similarly, Gannon (2019) discussed various components of the syllabus. He advocated decolonizing the syllabus, i.e., including viewpoints of scholars from diverse backgrounds, adapting syllabi, course readings, PowerPoints, and tests to adhere to Universal Designs of Learning (UDL).

My syllabus and content in Course #2 did not adhere entirely to all principles of UDL (for example, tables for course schedule) and are a work in progress. However, to encourage conversational style and break the monotony of written text, pictures, memes, music, and video-based activities on syllabus and course content are conducted at the start of every session. In the same vein, to encourage students to refer to the syllabus every week, assignment completion steps and requirements, submission details, and rubrics are included in the syllabus. Thus, students and I referred to in class weekly while discussing assignments and activities for the week.

To stimulate course content's relevance on daily life, the impact of COVID-19 on family routines, coping, and stress was chosen as a topic class research project. The survey was created in advance, and the study was IRB-approved before the semester began. Students completed the literature review, data collection, and data analysis of more than 500 participants on their variables of choice during the semester. On a good note, one of the students wrote an internal

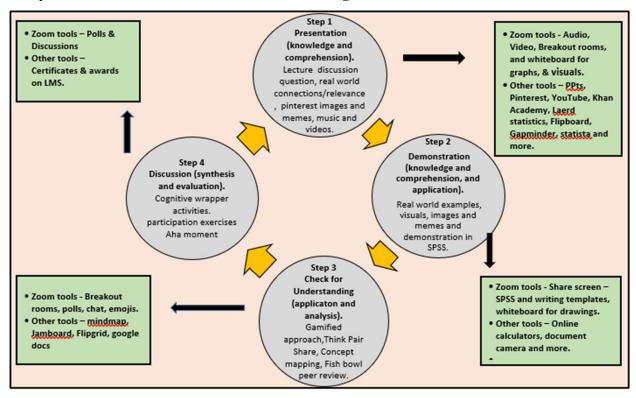
grant and received \$1000.00 to analyze and publish the findings. Three other students planned to integrate the same study into Course #3 to design and evaluate an intervention program.

The Instructional and Theoretical Framework

The theoretical and instructional frameworks utilized for the courses were Bloom's Taxonomy (1956) and an adapted version of the 4-steps instructional model of Partners in Parenting Education (PIPE) (Joyce & Showers, 2003). While Bloom's taxonomy helped align learning outcomes, activities, and assessments and fostered higher-order thinking, the adapted 4-steps of the instructional model strengthened the knowledge base and promoted active engagement during class sessions. Overall, the above combination of both frameworks augmented the depth and breadth of student skills and success.

Briefly, Bloom's Taxonomy (1956) categories are knowledge, comprehension, application, analysis synthesis, and evaluation. The four instructional steps of the adapted PIPE model (Joyce & Showers, 2003) are: a) presentation of objectives of the session and details of the topic, b) demonstration of processes, c) group or individual activities to check and practice learning, d) discussion, evaluation, and feedback on the content. The adapted version of the four-step was used in most sessions (see Figure 1).

Figure 1
4-Step Instructional Model, Activities, and Technological tools



To understand the applications of the 4-steps in a classroom and Bloom's Taxonomy, let us assume we are teaching a topic on four levels of measurement – nominal, ordinal, interval, and ratio - a topic most students do not understand well, negatively affecting their data analysis.

Presentation of a topic through lecture included a detailed explanation of the relevance of measurement levels, unique characteristics of each level with several examples (Bloom level-knowledge and comprehension), and visual integration of the content through memes. Demonstration of the topic included identifying levels of measurement of a few variables and demonstrating changing levels of measurement in SPSS (Bloom level - application). Group or individual participation activities to check for understanding of the concepts included a low stake graded in-class/homework exercises and peer review of the assignments (Bloom level - application and analysis). Resolutely, discussion of the activity included collecting evaluation of students and feedback through cognitive wrapper exercises (Bloom level - synthesis and evaluation).

Cognitive wrapper exercises have been shown to enhance metacognitive and self-regulated learning (for more details - see Lovett, 2013, Bowen, 2013, Edlund, 2020). On most days, cognitive wrapper exercises included the clearest and muddlest points, potential issues, and struggles, and ascertaining students' confidence and strategies in mastering the content. Additionally, the exercise summarized the main points of the session. Please see Figure 1 to identify Zoom and other applications used for each step.

Classroom Activities and Assessments – Gamified Approach

As stated earlier, common complaints of research methods students were an absence of "fun" element, relatedness with the course content, and therefore challenges with appropriate applications of concepts in the real world (Tan & Hew, 2016). Additionally, if the student cameras are not turned on, student engagement cannot be judged accurately. Therefore, some gamification elements were incorporated to offer respite from dry content and promote student engagement and applications of concepts within various scenarios.

Gamification of courses includes any games, simulation exercises, or computer-assisted instructions. Gamification of content adds fun to the abstract content for students who learn by doing and, therefore, provides active engagement and improved problem-solving skills, motivation, and learning (Gee, 2003; Kapp, 2013). Smith (2017) measured students' attitudes before and after engaging in the gamified modules of an introductory statistics course. The dimensions of the attitudes were cognitive competence, affect, interest, value, difficulty, and effort. He noted not only positive impacts on all dimensions, but also an overall improvement in performance grades.

Many textbook publishers have integrated gamified approaches into their content. The gamified approaches that are free of cost pique students' interests and offer relief from dry and abstract content while attaining necessary competencies. Some activities to gamify course content are data simulation activities, role-playing, dice games, Kahoot, Jeopardy, Coke vs. Pepsi challenge (Zieffler et al., 2008), random number generator, making a decision tree, and more. Besides, websites and resources such as mathgames.com, Pinterest, YouTube, and Khan Academy can offer much-needed relief from the lecture through memes, animations, basic games, images, videos, etc.

Another way to gamify a course is to offer digital badges and certificates after completing specific assignments and milestones with a particular grade/score to improve students' control over their learning and motivation (Lockley et al., 2016). Both Blackboard and Canvas offer digital badges to motivate students.

In course #2, the gamified approach was incorporated in the 3rd-step of the instructional model. These include group or individual activities, such as Jeopardy, Kahoot to check for understanding of the concepts. On some days, students' responses/scores served as a participation exercise and got full points for participation, while on other days, these exercises were low to medium stake graded assignments.

Assessments and Feedback – Rubric and Templates

Wiggins (2012) recommended seven essential characteristics of feedback. According to Wiggins, feedback is goal-referenced, tangible and transparent, actionable, user-friendly (specific and personalized), timely, ongoing, and consistent. Although many instructors feel overwhelmed with too much grading, Wiggins recommends, "...less teaching plus more feedback is the key to achieving greater learning."

In my Course #2, effective feedback with all seven characteristics was extended through a detailed and written rubric in the syllabus. Thus, students had a prior understanding of the assignment's goals, scoring system, and actionable benchmarks of assignments before submission. Thus, a well-written rubric can automatically omit the uncertainty (related to assignment expectations and grading criteria), which may prove to be crucial during uncertain times such as COVID-19.

Overall, 20 mid to low-stakes assignments and ten high-stake assignments in the course due on most Fridays contributed to the participation grade. The high-stake assignments consisted of various sections of the research paper. Before final submission, each section of the research paper underwent peer review (graded) on the rubric/feedback template. Then, after students completed revisions based on peer feedback, the section was submitted to me for further feedback using the rubric. Finally, the section was again revised and submitted at the end of the semester.

Thus, 10-high stakes exercises were built upon low and medium stake participation exercises. Utilizing a rubric for participation, peer review, and instructor submission encouraged students to actively think about their writing issues and follow instructions. Peer reviews were implemented by creating groups on Blackboard for a graded submission, and the assignments and feedback were shared on Google Docs. Some advanced tools such as Screencast-O-Matic are available to provide input; I used the MS word track changes tool to write comments. In the future, to reinforce big ideas, I can incorporate online quizzes with built-in instant feedback. The students can take the quiz any time before the class.

Low-Cost Extra Resources

According to Nemec (2020), students spend an average of \$413 on required materials. In addition, compared to the past, students in 2019 and 2020 spent \$100 more on technology than course material. The use of regular books and technology implies a waiting period and higher costs result in many students delaying buying books or not buying at all. Open education resources (OERs) are recommended to encourage students to read books and minimize the negative impact of rising textbook and technology costs (de los Arcos et al., 2014).

OERs include textbooks, multimedia, tests, software, and assessments that are part of the public domain or have been released under an intellectual property license, such as a Creative Commons license (Hilton, 2016; Abramovich & McBride, 2018). OERs are free and, if regularly

revised by the authors, can be beneficial for both students and instructors (see Cannon & Brickman, 2015 for details.)

As stated earlier, many students struggled with statistics; therefore, I felt that a workbook could provide an opportunity to practice statistical skills in the lab and strengthen applications of theory classes. However, requiring a workbook in addition to a required textbook on research methods and recommended textbooks on statistics and SPSS would also mean additional expense and financial burden on students. To lower costs, a search for a lab workbook through openeducational resources ensued.

In 2017, a lab workbook search, through open-educational resources, revealed no findings. The search for a paid lab workbook pointed to only one source – a lab manual written by McBride and Cutting (2016). The manual was deemed an inadequate fit for HDV students in content, style, design, price, and student learning outcomes. Hence, I wrote a workbook titled-*Introduction to Statistics and Writing in Behavioral and Social Sciences* was created for HDV students. The workbook aligned well with both theory and lab classes and has been through four semesters of peer reviews (students' and instructors' Fall and Spring 2018 and 2019) in Course #1. Currently, it is under revision for accessibility issues.

The workbook consists of two sections: a) Statistics and b) Writing. The two sections' goals are developing, enhancing, scaffolding, and deepening statistical literacy, reasoning, and thinking to ensure retention and improved learning outcomes. Thus, each book's worksheet offered several opportunities to practice foundational and higher-order thinking questions and construct knowledge and critical thinking skills through concept mapping/decision tree & applications to typical HDV scenarios. In addition, integrating pictures, images from social media, and memes broke the monotony of the dry and abstract statistical concepts, grabbed students' attention, and concretized the content.

Although the workbook was created for Course #1, I found it highly beneficial for Course #2 to build a solid foundation for data analysis. Selected worksheets were given to students for completion as a low-stake assignment, and then students were asked to apply those principles to examine their chosen variables.

Conclusions, Implications, and Next Steps

Undoubtedly, the COVID-19 pandemic obligated educators worldwide to find alternatives in course delivery, and online teaching came to the forefront as the best method. Online teaching is not new and will remain popular among non-traditional students who struggle with competing work-study-life demands and traditional students seeking to catch up on credits in summer and winter intersessions. However, best practices in online teaching gained much-needed attention in the current circumstances. Sustenance of effective delivery for online courses requires intensive faculty development trainings, accurate assessments, and replacement of existing resources (Azman, Singh & Isahaque, 2021), and an open and flexible mind among instructors, students, and administrators to change in Higher Education. All modalities have merits and demerits, but accurately assessing demerits and finding creative ways to minimize them is fundamental in teaching any course, regardless of a pandemic. Hence, continuing research on best practices in various modalities has implications for student success, engagement, competencies, and overall success.

The current review is mainly based on my experiences with teaching research methods and reflections on revisions in Course #2 during COVID-19. A sustained and robust investigation of student performances and instructional practices after Spring 2020 can be a precursor to future research. The findings thus attained and course revisions would not only strengthen the pedagogy of methods courses in HDV at SUNY Oswego, but may also offer empirical evidence for replication in other educational settings. As noted in my SET reports from 2016-to 2020, most students want to major in HDV with a presumption that human development courses are undemanding as they are based on common knowledge. However, three methods courses and COVID-19 issues in course delivery caught them off guard, resulting in dissatisfaction and anxiety

In Spring 2020, while grading, I had to consider students' circumstances due to COVID-19 for five students. In Fall 2020, the average grade in the course evidenced that the instructional model and synchronous strategies listed above made a big difference in student engagement and learning outcomes. As a result, no one failed, and the average class grade was "B," i.e., 86% (n = 16, SD 7.8, min 71.1%, max 98.1%). In addition, the student presentations and assignments satisfied all the requirements of an upper-division methods course. Students reported that the course was informative, and they enjoyed the discussions and frequent check-ins during sessions.

To conclude, first, research methods students may benefit from standardization of courses as it may reduce instructor effects in multiple sections and enhance students' knowledge base for advanced courses. Second, integrating best practices such as solid instructional pedagogy and model, accessibility and gamification of content, clear standards, and rubric may incentivize higher student engagement, motivation, and learning. Finally, continuous instructor reflections and experimentation with innovative pedagogy are essential to update courses with changing times, and student needs to create a highly effective learning environment. While doing so, instructors must attend to patterns that emerge from student evaluation of courses to strengthen their teaching practices further.

In the vein of continued support to students of research methods courses, I am planning on the following:

- Start: make course content and syllabus fully accessible (adhere to the principles of UDL) and figure out ways to lower the burden of the assignments on students and the grading burden on faculty.
- Continue: use contemporary topics for data collection for course relevance, OERs, 4-step instructional model in person or Zoom, and adaptation of course content based on best practices in teaching and student feedback.
- **Stop:** use of any stern and contractual type language in the syllabus.

Mamta Saxena, PhD is an Associate Professor at the State University of New York

References

- Abramovich, S., & McBride, M. (2018). Open education resources and perceptions of financial value. *The Internet and the Higher Education*, 39, 33–38.
- Aucejo, E. M., French, J., Araya, M. P. U., & Zafar, B. (2020, June 20). *The impact of COVID-19 on student experiences and expectations: Evidence from a survey. NBER Working Paper No. 27392.*https://www.nber.org/system/files/working_papers/w27392/w27392.pdf
- Azman A, Singh P., & Isahaque A. (2021). Implications for social work teaching and learning in University Sains Malaysia, Penang, due to the COVID-19 pandemic: A reflection. *Qualitative Social Work*, 20, 553-560.
- Bain, K. (2004). What the best college teachers do. Harvard University Press.
- Bloom, B. S. (1956). *Taxonomy of educational objectives: The classification of educational goals: Cognitive domain* (1st Edition). David MacKay.
- Bowen, J. (2013, August 22). Cognitive wrappers: Using metacognition and reflection to improve learning [Blog post]. Retrieved from http://josebowen.com/cognitive-wrappers-using-metacognition-and-reflection-to-improve-learning/
- Brady, A. K., & Pradhan, D. (2020). Learning without borders: Asynchronous and distance learning in the Age of COVID-19 and Beyond. *ATS Scholar*, 1(3), 233-242.
- Cannon, J. B., & Brickman, P. (2015). Helping students save: Assigning textbooks early can save money and enhance learning *Journal of College Science Teaching*, 44 (5), 38-41.
- Carter, M., & Harper, H. (2013). Student writing: Strategies to reverse ongoing decline. *Academic Questions*, 26(3), 285-295.
- de los Arcos et al. (2014). *OER evidence report 2013–2014*. OER Research Hub. http://oerhub.net/research-outputs/reports/
- Edlund, J. E. (2020) Exam wrappers in psychology. Teach Psychology, 47(2), 156-161.
- Elliott, W., Choi, E., & Friedline, T. (2013). Online Statistics Labs in MSW research methods courses: Reducing reluctance toward statistics, *Journal of Social Work Education*, 49(1), 81-95. doi: 10.1080/10437797.2013.755095
- Frey, T. K., Moore, K., & Dragojevic, M. (2021). Syllabus Sanctions: Controlling language and fairness as antecedents to students' psychological reactance and intent to comply. *Communication Studies*, 21(3), 456-473. https://doi.org/10.1080/10510974.2021.1876130
- Galvan, J. L., & Galvan, M. C. (2017). Writing literature reviews: A guide for students of the social and behavioral sciences (3rd Ed.). Pyrczak Publishing.
- Gannon, K. (2019, August 16). How to create a syllabus: Advice guide. *The Chronicle of Higher Education*. Retrieved from https://www.chronicle.com/interactives/advice-syllabus
- Ganong, L. H., Coleman, M., & Demo, D. H. (1995). Issues in training family scientists. *Family Relations*, 44(4), 501-507.

- Gee, J. P. (2003). What video games have to teach us about learning and literacy? *Computers in Entertainment*, 1(1), 1-4. https://doi.org/10.1145/950566.950595
- Hasan, N., & Bao, Y. (2020). Impact of "e-Learning crack-up" perception on psychological distress among college students during COVID-19 pandemic: A mediating role of "fear of academic year loss". *Children and Youth Services Review*, 118, 1-9. https://doi.org/10.1016/j.childyouth.2020.105355
- Hilton, J. (2016). Open educational resources and college textbook choices: A review of research on efficacy and perceptions. *Educational Technology Research and Development*, 64 (4), 573-590.
- Joyce, B. R., & Showers, B. (2002). *Student achievement through staff development* (Vol. 3). Association for Supervision and Curriculum Development.
- Kapp, K. M. (2013). The gamification of learning and instruction field book: Ideas into practice. John Wiley & Sons.
- Lin, X., & Gao, L. (2020). Students' sense of community and perspectives of taking synchronous and asynchronous online courses. *Asian Journal of Distance Education*, *15*, 169-179.
- Lockley, A., Derryberry, A., & West, D. (2016). Drivers, affordances and challenges of digital badges. D. In Ifenthaler, N. Bellin-Mularski, DK. Mah (eds) *Foundation of digital badges and micro-credentials* (pp. 55-70). Springer Link.
- Lovett, M. C. (2013). Make exams worth more than the grade: Using exam wrappers to promote metacognition. In M. Kaplan, N. Silver, D. LaVague-Manty, & D. Meizlish (Eds.), *Using reflection and metacognition to improve student learning: Across the disciplines, across the academy* (pp. 18-52). Stylus.
- McBride, D. M., & Cutting, J. C. (2020). Lab manual for psychological research and statistical analysis. Sage Publications.
- Nemec, J. (2020, June 25). NACS Report: Student spending on course materials continues to decline. https://www.nacs.org/student-spending-on-course-materials-continues-to-decline
- Nieuwoudt, J. E. (2020). Investigating synchronous and asynchronous class attendance as predictors of academic success in online education. *Australasian Journal of Educational Technology*, *36*(3), 15-25. https://doi.org/10.14742/ajet.5137
- Smith, T. (2017). Gamified modules for an introductory statistics course and their impact on attitudes and learning. *Simulation & Gaming*, 48(6), 832-854.
- Son, C., Hegde, S., Smith, A., Wang, X., & Sasangohar, F. (2020). Effects of COVID-19 on college students' mental health in the United States: Interview survey study. *Journal of Medical Internet Research*, 22(9), 1-14. https://doi.org/10.2196/21279
- Tan, M., & Hew, K. H. (2016). Incorporating meaningful gamification in a blended learning research methods class: Examining student learning, engagement, and affective outcomes. *Australasian Journal of Educational Technology*, 32(5), 19-34. http://dx.doi.org/10.14742/ajet.2232

- Uttl, B, & Smibert, D. (2017). Student evaluations of teaching: teaching quantitative courses can be hazardous to one's career. *Peer J Publication*, 5, 1-13. https://doi.org/10.7717/peerj.3299
- Wiggins, G. (2012). 7 keys to effective feedback. Educational Leadership, 70(1), pp. 10–16.
- Zieffler, A., Garfield, J., delMas, R., & Reading, C. (2008). A framework to support research on informal inferential reasoning. *Statistics Education Research Journal*, 7(2), 40–58. jse.amstat.org/v16n2/zieffler.html