



Stop Trying to Do It All!: The Team-Teaching Producer/Presenter Model for
Virtual Classrooms

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PRODUCER/PRESENTER CO-TEACHING

While teaching during a global pandemic has had many challenges, perhaps the greatest challenge facing faculty has been pivoting to a virtual format. Research has indicated for years that a "producer" should facilitate virtual teaching, improving the experience for the presenter and participants, but many faculty attempted to "do it all," teaching virtual classes solo.



ABSTRACT

While teaching during a global pandemic has had many challenges, perhaps the greatest challenge facing faculty has been pivoting to a virtual format. Research has indicated for years that a “producer” should facilitate virtual teaching, improving the experience for the presenter and participants, but many faculty attempted to “do it all,” teaching virtual classes solo. We employed team-teaching as we combined 2 virtual sections of our first year composition course (FYC) with one instructor acting as “presenter” and the other acting as “producer” to explore whether the team-teaching producer/presenter (TTPP) model of virtual teaching could increase student success rates and create a sustainable model for faculty. Using practical action research, we collected data from different course modalities of

FYC sections at our institution over a period of 2 years to compare pass rates, retention rates, and student evaluation data across all sections of our FYC to our TTPP virtual sections; we analyzed our student feedback from various surveys; and we included our own anecdotal observations. Our preliminary findings showed improved pass/retention rates over those of solo virtual and hybrid virtual sections. Our student-evaluation numbers were among the highest across all sections of FYC. Overall, these findings suggest that there are many new opportunities for research to further demonstrate that virtual teaching, especially in the TTPP model, should persist beyond pandemic necessity and become a sustainable and affordable additional model for remote learning.



INTRODUCTION

Amid the many clichés arising from the COVID-19 pandemic, the refrain that professionals everywhere adapt to “the new normal” remains the most cloying yet pervasive. In the field of education, instructors were asked to quickly pivot to new modalities. Across the nation, faculty detonated centuries of classroom pedagogy and refashioned new methodologies from the shrapnel, often with little training or preparation, in an effort to keep their students progressing and their institutions functioning.

After the abrupt pivot in spring of 2020, Wor-Wic Community College (Wor-Wic) adopted 6 different course modalities for implementation in the fall of 2020 to support as many different groups of students as possible through the many pandemic-inspired unknowns. We offered virtual courses (synchronous classes with set meeting times offered through a video conferencing platform like Zoom or Microsoft Teams) as well as online classes (asynchronous classes offered through our Learning Management Software [LMS], Blackboard). We also offered many new combinations of these delivery models (and each was labeled as a variation of “hybrid”). Some of these hybrid modalities, like synchronous-virtual/face-to-face (where instructors delivered the class face-to-face for half of the students while simultaneously live-streaming the class via Zoom for the other half) or synchronous-virtual/online (where instructors delivered half of the class time synchronously via Zoom and the other half via asynchronous course work in our LMS) were quickly abandoned after the first semester when faculty burnout and student frustrations revealed them to be ineffective and unsustainable.

However, even the straightforward fully virtual model was also rife with frustration. Much of the frustration is encapsulated by Gallagher and Palmer’s (2020) observation that “the approach most colleges are employing is simple ‘remote learning’ via live Zoom classes, a method little evolved from video conferencing from the late-1990s.”

In other words, teachers were not matching pedagogy to modality. Faculty members, in their heroic attempts to “do it all” ignored best virtual teaching practices. As Huggett (2017) argued pre-pandemic, successful virtual programs “are the product of 2 key components: interactive design and effective delivery.” Experts on virtual presentations in the field of education and in the private professional sector have long recognized that effective design requires a “producer,” someone with the technical expertise to manage the presentation software during the virtual presentations (Huggett, 2017; Christopher, 2015). According to Huggett (2017), a producer can free up the facilitator to focus on delivering content “even if the technology doesn’t cooperate” or “a participant needs extra assistance with their technology connections.” Even if there are no technology problems, “having a producer makes for a better participant experience.” Despite these early but well-established guidelines about presenters needing live support in the form of a partner for virtual class delivery, the speed with which faculty had to transform their face-to-face classes meant they often received little training, support, or resources, either technological or pedagogical, from their institution (Leiba & Gafni, 2021).

INTRODUCTION

As a result of this oversight, by the end of 2020, many faculty found themselves struggling to maintain an engaging, student-centered virtual classroom (Leiba & Gafni, 2021). Worldwide, faculty and students alike experienced frustration, exhaustion, disengagement, and burnout (Leiba & Gafni, 2021; Mortazavi & Salehabadi, 2021). Some institutions were ready to abandon virtual learning completely in favor of returning to the classroom (Davis et al., 2022). However, virtual learning has great potential at schools like Wor-Wic and other commuter institutions where many of the students are nontraditional, balancing work, school, and family obligations while facing financial, logistical, and health-related obstacles that reflect the vast inequality and paucity of resources across America. Noted education researcher and author Mike Rose (2012) reported that "the majority of...students in community colleges...are from low-to modest-income backgrounds. And some live in poverty. For the most part, they have not benefited from... quality educational resources. They typically must work—some full-time or close to it—have family obligations, and have limited transportation." None of these challenges have been eliminated over the decade since Rose described them, and the 2 years of ongoing chaos from the pandemic has only exacerbated the problem.

Since the 2 most popular community college course delivery models are opposite in their approach—synchronous in-person classes are engaging but often inconvenient to student schedules while asynchronous online classes are convenient but often lack the engagement of in-person classes—we felt that virtual classes could offer the possibility for a strong third

option: the engagement of synchronous in-person classes and the convenience of asynchronous online classes. However, we understood that this course delivery model required a new innovation to be sustainable and affordable. Virtual teaching alone is not sustainable. Faculty simply cannot effectively "do it all" in a virtual course by themselves, but at a small community college like Wor-Wic we could not afford to add an IT person to each section to serve as a producer. Thus, as we moved beyond the "anything goes" mania of early pandemic pedagogy, we asked ourselves the following question: Could the well-documented benefits of team-teaching, namely, professional growth, increased confidence and collegiality, more teacher-student interaction, and enhanced motivation for both students and faculty (Kluth & Straut, 2003), be combined with the best practices of splitting duties within virtual seminars following the producer/presenter model to improve synchronous virtual teaching?

We piloted a section of a team-teaching producer/presenter (TTPP) course for a semester in spring 2021 and were so inspired by the positive experience that we implemented it again in the following 2 semesters (fall 2021 and spring 2022). Along the way, we sought continual feedback from our students about their virtual classroom experiences to explore their opinions, and they confirmed that it seemed much better than solo-taught synchronous virtual classes. As we move beyond the limitations of hastily implemented pandemic necessity, we see potential for this model as a viable long-term option for students and faculty.



METHODS

WHAT IS THE TEAM-TEACHING PRODUCER/ PRESENTER MODEL?

Our TTPP model combines the collaborative aspect of team-teaching with the cognitive benefits of splitting duties within virtual seminars. In practice, we combined 2 virtual sections of our FYC course that were offered on the same days at the same time. This meant that 44 students (22 from each section) attended a single virtual class via Zoom



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The producer was responsible for providing a seamless virtual experience: taking attendance, admitting students, managing the chat, advising students about technical difficulties, setting up activities, managing breakout rooms, and any other duties to facilitate the many overwhelming tasks that are necessary in a virtual class session. The presenter was responsible for leading the class: delivering lectures, answering students' spoken questions, giving instructions, and leading activities. The goal of splitting the

work of virtual teaching between 2 SMEs was to improve the delivery of the course content through increased interactivity, real-time just-in-time mediation, and increased opportunities for communication and interaction with the professors both inside and outside of class. Both professors also collaborated frequently in the design of lesson plans and activities as well as shared the grading and communication load.

Though our initial plan was to keep the producer and presenter roles consistent, the most common theme revealed from our student feedback from our first semester was, as one student argued "You should have the instructors switch roles more often." As a result of those early suggestions, throughout our 3 semesters of employing this approach we changed roles regularly, usually between units. For example, in our institution's FYC course, the 4 units revolve around each of the assigned essays, so one instructor presented the first essay (the illustration assignment) while the other produced, and then the roles were reversed for the next essay (the cause/effect assignment).

METHODS

STUDY DESIGN

The hallmark of our effort to improve virtual teaching employed practical action research: a dynamic, recursive process that allowed us to identify the problem, incorporate our research, and then simultaneously gather results as we put the plan into action, continually adjusting our plan as we gathered more data, following Kemmis's (1994) "spiral of self-reflection." This approach was the best method for us to gather a variety of data and respond quickly to improve our courses and adapt to the constantly evolving reality of pandemic-altered education. Across 3 semesters, we collected data from a total of 96 students enrolled in our designated TTPP sections of our FYC course at Wor-Wic, a community college on the Eastern Shore of Maryland with an enrollment of approximately 4,000 students.

We compared student pass rates for our FYC courses across the college by delivery model through 2 years of pandemic-altered teaching (Table 1). We collected student evaluation data, which was anonymized, and aggregated the numbers by the delivery model (Table 2). Most importantly, we employed a grounded theory approach, developed initially by Glaser and Strauss (1967) that was "designed to create

theories that were empirically designed from real-world situations" (Oktay, 2012) to analyze our students' comments on 2 course-evaluation data points: 1) we surveyed our students at the end of each semester with a single open-ended question: "What feedback do you have about this class and how does it compare to your other classes?" and 2) we also collated the anonymous written comments from our semesterly "Student Opinion of the Learning Experience" (SOLE) evaluations. We then analyzed the individual comments, which allowed us to prioritize our students' voices and experiences as active collaborators in the process of improving our virtual delivery each semester, and as we evaluated these data points, we discovered 4 themes that improved our students' experiences: pacing /interactivity, engagement, reduction of anxiety/increase of confidence, and speed/amount of feedback. And finally, as teaching professionals with years of experience, team teaching provided collaboration and helped drive the dynamic cycle of self-reflection throughout this research as we anecdotally noted many fringe benefits from the TTPP model, comparing this experience to both our other pandemic-altered sections and our pre-pandemic classes.



RESULTS + DISCUSSION

Overall, our pass rates for the past 2 years are inconsistent, but the average pass rate for our TTPP virtual sections was 5% higher than our solo-taught virtual courses (Table 1). Students rated the TTPP virtual class higher (on average) than all other delivery models for our FYC courses (Table 2). Student comments on some optional feedback and end-of-semester evaluations were also insightful about not only their positive impressions of our course but also their opinions about the ineffective nature of solo-taught virtual courses. And finally, throughout the delivery of this course, we recorded many "fringe benefits" that contributed to the instructors' opinions that this TTPP delivery model is the most sustainable approach to virtual teaching.



PASS RATES

The data we collected on pass rates by modality shows some promise; however, the data is not very conclusive due to its small sample size, and compounding the challenge of interpreting these numbers is the context: the rates are derived from mid-pandemic courses presented under shifting institutional policies. These policies are reflected in widely disparate pass rates.

Despite this inconsistency (the highest semester boasted a 63% pass rate; the lowest was 53%), the numbers we have gathered so far show some promise in that overall average pass rate for the TTPP model (56.3%) was somewhat more effective than the solo-taught virtual sections (50.7%) (Table 1). However, it would be difficult to draw firm conclusions from this limited data set.

Table 1 Student Pass Rates by Course Modality, Fall 2020–Spring 2022.

	Total students	Pass rates
Online (asynchronous)	512	61.91%
In-person	272	67.65%
Hybrid: in-person/online	222	66.22%
Hybrid: virtual/online	73	50.68%
Hybrid: in-person/virtual	83	67.47%
Team-teaching producer/ presenter	96	56.25%

Also, worth noting is that the hybrid face-to-face/online sections, where an instructor taught half the class in person and half joined virtually via Zoom, had pass rates comparable to the face-to-face delivery (67.4% and 67.6%, respectively) (Table 1). However, these sections were only offered in Fall 2020 (before we began the TTPP model), and the pass rates were buoyed by faculty who were asked to be as gracious as possible with students due to the constantly evolving pandemic. Additionally, faculty in our department did not find this live-streamed face-to-face classroom approach to be a viable model for teaching. Anecdotally, the faculty who taught this model left the classroom dazed, exhausted, and frustrated. They were unable to effectively divide their attention between the Zoom students and the face-to-face students, forever leaving one group behind. Thus, as a department, we

abandoned this model. When it was first proposed, we should have quoted Huggett's (2017) exhortation: "Don't do it" and pointed out that this double-delivery is not sustainable for the presenter. Another contextual concern that may have affected these pass rates was that coinciding with our first offering the TTPP model, administrative guidelines shifted away from Covid-inspired flexibility back toward our standard emphasis on consistently applied policies. Considering the small sample sizes, these minor changes (which affected a handful of students in each class) likely had an oversized impact on the data. Still, despite these challenges, the TTPP model is a few points behind the delivery approaches that have been in place for many years: online and face-to-face courses. Thus, it is our hope that the rates for the new model will improve over time as we continue to offer TTPP virtual sections in the future.

VIRTUAL FEATURES BY DESIGN AND STUDENT PERCEPTIONS

Despite the limited data regarding student success, we do have multiple measures that reveal student appreciation of this model. Our primary source of support was derived from our end-of-semester evaluation numbers, which were among the top of our institution's FYC sections when compared to all course-delivery models (Table 2). In 11 out of 15 student-evaluation metrics from our SOLE end of semester survey, the TTPP model rated the highest by modality (ranging from 3.78–3.98 out of 4), and the other 4 metrics were also very strong (ranging from 3.7–3.93). We do recognize and acknowledge

that this positive evaluation may have been the result of our enthusiasm, or we may have benefitted from the well-documented race (Smith, 2009), age, and gender biases (Arbuckle & Williams, 2003) in student course evaluations; however, as seen in the following sections, data from our students' written comments speak to both our effectiveness and their preference for the TTPP model, and as Cashin (1995) concluded, "in general, student ratings tend to be reliable, valid, and relatively free from...the need for control; probably more so than any other data used for evaluation."

Table 2 Student Evaluation Averages for FYC by Modality Spring 2021–Spring 2022.

	Team-teaching producer/ presenter	Hybrid: in-person/ online	In-person	Online	Hybrid: virtual/ online
Assignments useful in learning	3.88	3.79	3.71	3.80	3.70
Objectives agreed with course	3.85	3.83	3.76	3.84	3.80
Knew course expectations	3.80	3.78	3.71	3.81	3.80
Course clearly organized	3.92	3.73	3.67	3.78	3.50
Exams covered aspects of course	3.70	3.71	3.56	3.76	3.70
Instructor communicated clear/concise	3.98	3.81	3.77	3.78	3.50
Instructor used variety of instructional approaches	3.92	3.80	3.63	3.70	3.80
Instructor was fair and impartial	3.87	3.83	3.79	3.81	3.80
Instructor demonstrated importance of subject matter	3.92	3.83	3.76	3.79	3.70
Instructor related material to real life situations	3.78	3.74	3.68	3.76	3.20
Instructor encouraged multiple resources	3.93	3.86	3.78	3.80	4.00
Instructor provided timely/frequent feedback	3.88	3.73	3.76	3.79	3.50
Instructor enthusiastic about teaching	3.95	3.82	3.69	3.85	3.70
Instructor encourages self-learning	3.82	3.83	3.68	3.75	3.70
Instructor respects opinions/ expressions	3.82	3.82	3.80	3.81	3.80
Total number of students who completed the survey	34	46	118	132	6
Overall average	3.87	3.79	3.72	3.79	3.68

VIRTUAL FEATURES BY DESIGN AND STUDENT PERCEPTIONS

In analyzing the data gathered from anonymous SOLE comments as well as the comments from a non-anonymous survey we conducted each semester, via a process rooted in grounded theory, we noticed 4 distinct themes emerge from the student feedback. All 4 themes related to students' positive experiences inside and outside of the classroom: pacing/interactivity, engagement, reduction of anxiety/increase of confidence, and speed/amount of feedback. These themes illustrate that combining the collaborative benefits of team-teaching with the cognitive benefits of splitting duties creates a powerful and effective experience for faculty and students alike.

The first theme, pacing and interactivity of the course delivery, was likely the result of careful planning of each day's lessons to fully leverage the virtual environment to include many interactive components. We had some standard reading quizzes outside of class time delivered via our LMS (Blackboard), but we also supplemented these with in-class quizzes where students could collectively discuss and answer questions via polling software, elevating quizzes to a more interactive and entertaining game-show format. We used the Blackboard discussion board as a tool for students to share drafts of their writing during class and breakout rooms to workshop those drafts with real-time peer feedback. We employed the live chat feature of Zoom for students to ask questions of each other or the producer, share ideas or comments, and sometimes workshop several sentences of writing. This allowed class to move at a lively pace, minimizing interruptions to the flow of content delivery, as often results in solo-taught virtual classes. Several students noted appreciation for this design. As one student summarized, "Each class was varied between different activities

and moved at a fast yet comfortable pace." Additionally, our TTPP sections had the highest average evaluation score of any modality in response to the prompt: "The instructor used a variety of instructional approaches."

Because of the more effective nature of the course pacing and the increased interactivity, a second theme involved an increase in engagement. Many comments referred to students feeling "less bored" than their solo-taught virtual classes, which speaks to the relationship between design and student experience. Having a second faculty member handle the technical responsibilities and student questions resulted in less "dead air," which helped keep the class session fresh and engaging for students. In addition to the evidence shown by earning the highest overall average score in the category "Instructor demonstrated enthusiasm about teaching," (Table 2) one student summed up their opinions as follows: "Both professors did a great job of fully covering the material in a way that was as entertaining as it was thorough. I can't say that at any point during the class I felt bored." Another student said, "I love learning in this class! I felt like I understood what I was learning and was able to ask questions if I didn't understand."

In conjunction with an increase in enjoyment, many students reported that they felt their anxiety about participating in a virtual class dissipate and their confidence as a writer grow. The option to put a question in the chat and receive an immediate answer from the "producer" encouraged some of the quieter students to more actively participate in class. As one student told us via a class survey, "I liked that I didn't feel like I was interrupting class by putting something into the chat. I was able to get a response BEFORE heading onto

VIRTUAL FEATURES BY DESIGN AND STUDENT PERCEPTIONS

a different area of what we were learning that day." We also frequently used Zoom's breakout rooms with clear instructions for the students to talk about their progress on their assignments, workshop ideas, complete peer review, answer questions together and other collaborative activities. As their anxiety about participating decreased, their confidence as a writer increased. One student's evaluation comment spoke to this specifically: "I appreciate how Professor Porter & Reddish take us through the smallest details of writing such as a thesis because these details have made me so much more confident as a writer."

Outside of our virtual class time, students found other benefits in our approach. The final theme in the data from the student evaluations spoke to an increase in both the speed and the amount of feedback. Students' work was often assessed more quickly than usual because we established clear guidelines together as instructors for when and how things would be graded, and we worked hard to complete "our half" promptly. Thus, team teaching provided authentic teamwork (because we wanted to help our students), a sense of professional accountability (because we couldn't let our teammate down by missing the deadline), and a bit of friendly competition (because we wanted to finish "our half" first). Students frequently got replies to their emails more quickly (sometimes within the hour) because they were directed to copy both professors on their questions. Students also had double the number of faculty office hours available to them. One of our frequent office-hour visitors told us, via survey, "I love how one teacher has an office hour before class and another has one after, it is really nice, because if I have a question before or after class, I can visit one of the office hours." And, again, we see this reflected in the data from the student evaluations

as we boasted the highest average score of any modality in the category "Instructor provided timely and frequent feedback" (Table 2).

Not only did students receive more prompt evaluation and responses, but they had the benefit of 2 different perspectives on their work. Each student had 2 distinct faculty personalities to choose from when they had a question, so they could gravitate toward the instructor of their choice. This choice may have reduced students' anxiety about reaching out if they needed assistance. We also switched which students' work we graded for each essay, resulting in students receiving feedback from both of us throughout the semester. This led to some students electing to receive the quickest feedback, some students gravitating to their preferred faculty member, and others tailoring their questions to their audience, which is an important soft skill for students and burgeoning skill in composition. Several of our students addressed this feature specifically in response to a survey. They said things like "I also like having 2 professors because I can get different types of feedback on different assignments...having a second opinion always helps."

Overall, our students repeatedly praised the TPPP approach in a way that elevated it above all their other courses. One student wrote, "The dual professor virtual class format was refreshing, to say the least, and I would love it if all my classes would adopt this format." Another reiterated a similar message: "I like having 2 instructors and would recommend the teachers to people." This appreciation for the TPPP model was a popular refrain from our students—they may not have told their other teachers that they preferred the dual-professor format, but that message was resounding through our own evaluations.

COLLEGIAL COLLABORATION

For teachers completely overwhelmed in the middle of the pandemic, though, the most important benefits from the TTPP model were less quantifiable, but nonetheless vital to the courses' success, sustainability, and importance going forward. Team teaching has many well-documented benefits: professional growth, increased confidence and collegiality, more teacher-student interaction, and enhanced motivation for both students and faculty (Kluth & Straut, 2003). Accordingly, the TTPP model offered us, the professors, collaborative planning, shared resources, informal professional development, a built-in sounding board, and increased confidence. Often it felt as if a "hive mind" might be forming. At a time when most of us were socially distanced and feeling isolated and disenfranchised, we found camaraderie as we planned the course and wrote our syllabi collectively, built our Blackboard course shell together, and reviewed and revised our assignments, choosing what we liked best from each other's courses from the past.

As we developed each day's lesson plans through the first semester, we pooled our resources. We used cloud-based collaboration software (Microsoft Teams) to share our lesson plans, our PowerPoint slides, our ideas, and our activities. We frequently brainstormed ideas for classes that had "fallen flat" in the past and together we reimagined them for the virtual classroom environment. We frequently rewrote lessons and materials, developed striking visual aids, and integrated multi-media connections. Despite each of us having taught the course independently for over a decade, the course design felt fresh. We often met in the hallways or in our offices to reflect on our class session and brainstorm ideas for "next time," being sure to take notes in our shared lesson plans so we

could be sure to implement those changes going forward. This improved both of us as teachers, and a frequent refrain in our conversations after class was, "I'm totally stealing that for my other sections." At times, an outside observer in a class can induce a "spectator effect" or amplify "imposter syndrome," but for us, having both professors collectively working through every class session to actively assist our shared group of students minimized these psychological factors and improved our confidence as professionals.

Adding to this improved course development, planning, and delivery, we also sharpened each other by sharing techniques that facilitated both the clerical work of teaching and honed our pedagogical approaches—we learned new ways to use Blackboard (even though we've both used it for decades) to streamline processes, we shared research with each other and made changes to our course design and delivery as a result, and we both became better teachers in our other FYC sections through the process. This is not to say that teaching the class was easier or lacked frustration, but during those challenges, especially during the social isolation in the waxing phases of the pandemic, we found that team-teaching provided us with a built-in sounding board. Collaboratively teaching provided us a colleague to share these frustrations with. We were able to express our concerns during hallway conversations, office chats, and via our Microsoft Team, and we could brainstorm solutions together. We could take turns responding to student queries—tagging in to support the team when our teammate didn't have the time or energy. At a time when many faculty members felt more removed from the workplace, adrift, we were anchored and steadier—which enabled us to address and tackle the challenges of this "new normal."



CONCLUSION

Unfortunately, the small sample sizes and fluctuating pass rates make it impossible to draw firm conclusions about the universal viability of this model. However, anecdotal conclusions are still possible. The TTPP model is more successful than the virtual/online model. It is more sustainable for faculty than solo-taught virtual classes or certain hybrid classes, like virtual/online or face-to-face/virtual. While our students' pass rates were not as high as face-to-face or asynchronous online, both methods have decades of research and practice behind them. Given additional time as well as institutional and faculty buy-in, we are hopeful that the TTPP method has potential to be a viable option to deliver synchronous online courses that, over time, could lead to even greater student success



CONCLUSION

Perhaps most importantly, this model provides a zero-cost solution to a growing problem in higher education: creating accessible, equitable teaching models that are as flexible as they are rigorous, in a way that is sustainable for faculty.

Because this is a bold new direction in synchronous virtual teaching and because there is a dearth of research for faculty to draw on, opportunities abound for both quantitative and further qualitative research. For quantitative research, pass rates and retention rates between TTPP virtual courses and solo-taught virtual courses could be compared, and these same metrics could be evaluated between TTPP virtual courses and other modalities. Even more possibilities exist for qualitative research. Since all virtual classes can be recorded and reviewed in detail later through traditional or automated techniques, the possibilities for analysis of virtual teaching (with careful planning from the outset) seem bound only by professionals' creativity.

Researchers might design a study to explore the quantity and quality of interactions both verbally and via the class chat box in TTPP virtual sections compared with solo-taught virtual sections. Research could be conducted to survey faculty members' and students' perceptions of virtual teaching, contrasting the TTPP model with solo-taught virtual sections. At larger institutions that have the resources to assign technical producers who are not SMEs, it would be useful to compare metrics between tech-support producers and SME producers to see if student perceptions and/or success rates were impacted by the type of producer. In general, we

are excited to see what new directions research might take to help improve virtual teaching via the TTPP model.

Overall, if academia sees value in the possibility of virtual teaching, they need to follow the long-standing guidance that experts from the private sector have argued for almost a decade: flying solo is nearly impossible in the synchronous virtual setting. As Huggett (2017) said, "If your organization perceives a producer as an extra expense instead of a value-added necessity, then you may need to justify one....or get creative in how you can supply a producer on a shoestring budget." Our creative efforts to justify this necessary resource led to our development of the no-cost TTPP model, and we hope that other scholars will follow our model and test it and other new solutions for virtual teaching, particularly in community college contexts where commuting students will reap the most benefit. Such proposals, though, will require administrators to dedicate resources toward re-envisioning course design and planning.

However, there are some limitations to the TTPP model. The course design works best as a solution for large, multi-section classes, which, for many colleges, limits the field to first-year, gatekeeper courses like FYC. Likewise, the collaborative nature of this method requires a thoughtful pairing between faculty. In many ways, team-teaching is like a marriage: it works best with open lines of communication, suitable personalities, and complementary approaches to teaching and grading. Faculty must decide early on how to split the responsibilities, including grading, lesson planning, and student

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CONCLUSION

inquiries. One of the best ways to maintain a healthy partnership is to utilize cloud sharing technology, such as Google Docs or Microsoft Teams for continual asynchronous communication, collaborative lesson planning, resource sharing, impromptu discussions, and mental health check-ins. Once a team has crafted a resource repository, the model becomes immediately scalable: faculty can split and re-pair as often as time and inclination allows.

The preliminary findings from our 3-semester pilot seem to echo what much of the current literature on virtual teaching suggests: while faculty and students alike appreciate the convenience and flexibility of online learning (Leiba & Gafni, 2021; Palmentieri, 2022), they often balk under the seemingly insurmountable drawbacks: the high bar of technical expertise and training, screen fatigue, isolation, cognitive overload, and decreased motivation (Leiba & Gafni, 2021; Mortazavi & Salehabadi, 2021). Those who report positive experiences with virtual teaching advocate for a paradigm shift in pedagogy: a more collaborative "community of teachers, learners and professional users, who can exploit the enormous potential of the IT environment" (Palmentieri, 2022). In this way, Palmentieri (2022) argues, students will no longer be mere spectators but "actors of a deep learning experience" who are "motivated to participate collectively in the construction of a cultural environment." Faculty, likewise, will have to give up the "role of 'sage on the stage' to take on the role of facilitator and 'guide on the side' of each student" (Palmentieri, 2022). The TTPP model offers an easily implemented opportunity for institutions to embrace these

pedagogical guidelines and improve virtual teaching and learning.

Our hope is that faculty worldwide can build on the preliminary practical action research we shared and incorporate additional techniques for improving the virtual environment beyond pandemic necessity. Pandemics are not the only force threatening to destabilize higher education: the speed of technological progress, the looming cataclysm of climate change, and the ever-widening gulf of inequality require educators everywhere to continually respond to the constantly shifting sands around us. Adding an SME producer to a virtual class should enable other faculty at other institutions to respond to these challenges to improve student success. As one of our students from our first semester of our TTPP course told us via survey, "This class has been a class I've been trying to pass since my first full year at Wor-Wic in 2010... For the first time in years, I'm no longer afraid of failure because I'm having some success in this class." Reimagining course delivery, when done correctly, can have a life-altering impact for our students.

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