COLUMBIA | SOLER
Science of Learning Research Initiative

2021 Provost's SOLER Seed Grants
Proposal Template

Section 1: Project Summary	
Award Year:	2021-2022
Title of Study:	Measuring the Learning Outcomes of Self-Directed Rhetorical Grammar Modules for Multilingual Writers
Principal Investigator (PI) Information	
PI #1 Name:	**Vanessa Guida Mesina**
PI #1 Title:	**Lecturer-in-Discipline**
PI #1 Department:	**Undergraduate Writing Program / English & Comparative Literature**
PI #1 Email:	**Vdg6@columbia.edu**

Co-Investigator (CI) Information
Use an asterisk (*) to denote any CI who will serve as a Co-PI.

CI #1 Name:		CI #2 Name:	
CI #1 Title:		CI #2 Title:	
CI #1 Department:		CI #2 Department:	
CI #1 Email:		CI #2 Email:	
CI #3 Name:		CI #4 Name:	
CI #3 Title:		CI #4 Title:	
CI #3 Department:		CI #4 Department:	
CI #3 Email:		CI #4 Email:	

Abstract: Describe the project in non-technical language; articulate the project objective; specify what makes the project innovative; describe your assessment or evaluation plan to ascertain student impact or other insights. (Limit 250 words.)

Type your Abstract text here. This study aims to measure the efficacy and learning outcomes of a series of self-directed rhetorical grammar modules designed for multilingual students enrolled in International Student sections of the first-year writing course at Columbia, University Writing (UWIS). The six "mini-lesson" modules, created with the assistance of a Hybrid Learning Redesign grant from the Provost's office, currently focus on first person pronoun use; reporting verbs; punctuation for complex sentences; passive vs. active voice; hedging words; and nominalizations. The modules are housed on each UWIS's Canvas course site. Lessons center on specific English language "rules" and conventions that international students encounter in the American academic setting, and ask students to consider how context, convention, and intent inform writers' choices. Students are required to

complete three modules during semester, however, the online component of the course is semi-synchronous and self-paced. Students select which three modules to complete, allowing them to decide which topics are of the greatest interest and urgency to them. This project therefore accommodates students of varying levels of English language proficiency and frees up valuable class time for students to practices these skills with their peers and instructors.

Each module consists of a preliminary intake questionnaire, and then a mix of screencasted "mini-lectures" on target forms, on-screen annotations of texts, readings, on-screen quizzes, and reflective writing exercises. Assessment of this project's efficacy will be comprised of three components: 1) student "exit ticket" surveys; 2) rubric-based rating of anonymized participant essays; 3) rubric-based assessment of participant peer feedback letters.

| **Section 2: Project Description** |
| Please complete each subsection taking into consideration the accompanying guidelines. |

Section 2a: Project Scope. (Limit 500 words.)
- Framing
    - State your overarching objective(s).
    - Identify specific aims and explain how they align with the overarching objective(s).
    - Describe the overall methodology that will be used in this study, covering such factors as retrospective vs. prospective data collection, interventional vs. non-interventional, randomized vs. non-randomized, observational, experimental, etc.
- Participants
    - Identify your target participants (e.g., students).
    - Specify how participants will be identified and contacted.
    - Estimate how many participants will be impacted during the grant period.
    - Briefly describe how the innovation will continue to benefit student cohorts beyond the PSSG duration (e.g., through curricular changes).

Type your Project Scope text here.

The objective of the project is to measure the efficacy of the above-detailed modules as delivery vehicles of rhetorical grammar instruction for international students. In other words, the overarching research question is: does a "flipped" and student-directed model of rhetorical grammar instruction lead to measurable gains in learning outcomes in international students? Student learning outcomes will be measured in two ways. First, anonymized participant essays will be evaluated by trained raters using rubrics designed to assess the learning objectives of the modules. Rubrics will be designed to help raters quantifiably answer the questions: does this essay show evidence of thoughtful engagement with the target forms discussed in the modules?

Second, participants' anonymized peer feedback letters will be evaluated for evidence of learning gains in the subject area of each module completed. Evaluation of peer feedback will once again be completed using a rubric, this time designed to answer the question: does this letter demonstrate an awareness of the target form studied by the participant. By taking this two-pronged approach, the project aims to assess if learners can both implement the decision-making skills detailed in the modules, and recognize and evaluate the decision-making of other writers (their peers). If funding and timing allow, the project will also run statistical analyses to measure and consider the potential impact of intervening variables, such as first language, years living in the U.S., and Columbia school affiliation (General Studies, Columbia College, SEAS, etc.).

Finally, the project will measure students' own sense of their learning outcomes via embedded surveys in each module, as well as a culminating "exit ticket" survey completed by participants at the end of the semester. These surveys will aim to answer two questions: 1) do students feel more confident in their ability to make grammatical choices for rhetorical effect following the completion of the module?; and 2) did students feel confident that they had selected the modules most appropriate and useful for them?

This project will rely on prospective data collection, and is non-randomized and quasi-experimental in nature. In both the fall and the spring semesters, one section of the course would introduce the intervention of the modules and one would not, allowing for a control group. As the researcher teaches two sections of the same course each semester, this project offers the opportunity to implement and study a control group while maintaining the instructor and instruction as constant variables. Therefore, participants will be recruited from within the researcher's own classes. An individual affiliated with the project other than the instructor would explain the project to students and offer students the option to give or deny their consent to participate. Roughly 56 students will be invited to participate over the course of the grant period. While this innovation was designed as a supplementary resource to support international students enrolled in the University Writing courses, the modules were intentionally created as stand-alone resources that could be utilized in any academic support context.

Section 2b: Rationale and Literature Review. (Limit 500 words.)
- Describe how the project aligns with national and/or Columbia strategic initiatives.
- Highlight key findings of relevant educational research. Include citations as appropriate.
- Describe any prior work your team has done in this space.

The proposed project was developed in consultation with Columbia University's Center for Teaching and Learning, and aims to promote active learning while supporting broad accessibility to a wide range of students. Drawing upon the four pillars of flipped learning articulated by the Flipped Learning Network (FLN; 2014), the modules being studied aim to: accommodate a diverse range of learners and learning styles; remain student-centered; be thoughtful in the designation of in- and out-of-classroom content; and position the instructor as an expert facilitator of student learning, rather than a lecturer of facts. As such, this practice relies heavily on Lev Vygotsky's (1978) theory of scaffolding, insofar as the instructor designs tasks that challenge students to implement what they have receptively learned on their own time in small and manageable ways once they arrive in the writing classroom.

The in-class tasks designed to complement students' completion of modules (e.g. peer review focused on target forms) might therefore be considered what Deslauriers et al (2011) term "deliberate practice;" students use their class time to interact as writers and editors, enabling instructors to engage in formative assessment and provide feedback at a critical juncture in student learning. While some scholars (e.g. Jensen et al., 2017) have suggested that learning gains from a flipped classroom model are less a reflection of the success of flipped classroom practice and more a reflection of instructor emphasis on active learning techniques, it is undeniable that hybridizing course content allows for more interaction and practice during limited class contact hours.

The design of the modules is grounded in the fields of applied and sociolinguistics, specifically the genre analysis scholarship of Ken Hyland (2004, 2013) and John Swales (1990), both of whom argue that explicit and accessible instruction of genre conventions is indispensable in L2 writing courses. As Hyland (2013) asserts, when instructors integrate a consideration of genre in their teaching, "linguistic patterns are seen as pointing to contexts beyond the page, implying a range of social constraints and choices that operate on writers in a particular context." A genre analytic stance requires that student writers *and* their teachers carefully consider writers' goals, intentions, audiences, and textual forms when making rhetorical choices. Swales' (1990) analyses of grammatical constructions most prevalent in academic discourse, coupled with Kolln and Gray's (2017) textbook on rhetorical grammar, formed the basis for the curricular design of this project.

Finally, the self-directed format of this intervention is inspired by recent scholarship on the potential of directed self-placement (DSP) to improve students' engagement and sense of self-efficacy. While this project does not require a placement test, students' choice of which rhetorical grammar

lessons to complete is inspired by the promise of direct self-placement (DSP) in fostering self-efficacy in L2 learners. Recent literature shows an appreciation of directed self-placement in promoting agency and responsibility in English language learners specifically (Crusan, 2011; Ferris et al, 2017; Ferris & Lombardi, 2020) , as well as first year writing students in general (Royer & Giles, 2003; White, 2004).

Section 2c: Assessment and Evaluation Plan for Specific Aims. (Limit 250 words.)
- Describe novel or to-be-adapted measurement tools (e.g., surveys).
- Outline key comparisons and briefly describe data analysis procedures.

Learning outcomes from the six modules will be measured by three independent, trained raters using rubrics to be designed in consultation with SOLER. Rubrics will be designed to help quantify answers to the question: does this essay show evidence of thoughtful engagement with the target forms discussed in the modules? Similarly, raters will assess participants' anonymized peer feedback letters, looking for evidence of learning gains in the subject area of each module completed. This assessment will also be completed using a rubric designed in consultation with SOLER to quantifiably answer the question: does this letter demonstrate an awareness of the target form studied by the participant? Finally, participants who complete the modules will complete both end-of-module and end-of-semester surveys, designed in consultation with SOLER, aiming to measure students' confidence in their own learning gains, as well as their confidence in their selection of module. These surveys will most likely be based on a Likert scale.

Once assessment of the essays has been collected, data analyses will be run using SPSS (or a comparable statistical software). The key comparison will be between intervention (module-completing) vs. non-intervention/ control groups. This analysis will seek to answer the question, did participants who completed the at-home modules show more gains in learning in the target forms than those who did not? Secondary analyses to be run include the impact of potential intervening variables (e.g. first language, years in the U.S., and Columbia school affiliation) on learning outcomes, as well as inter-rater and intra-rater reliability estimates.

Section 2d: Role of Key Personnel. (Limit 150 words.)
- Specify the expectations and obligations of all project personnel.
- Outline expected needs for in-kind support from SOLER facilitators.

PI: Vanessa Guida Mesina
•Complete final editing of revised modules. Make ongoing revisions as needed.
•Create assessment rubrics and exit surveys
•Develop and run norming session for raters
•Fully integrate modules into fall and spring courses, designing and facilitating complementary in-class practices.
• Run data analysis in SPSS with support from SOLER staff
• Complete final write-up of data and findings.

Graduate Student Raters (3)
• Participate in required module orientation and norming session using rubrics
• Read 3 anonymized essays and 3 peer feedback letters from *up to* 56 participants over the course of the 2021-2022 school year. Assess comprehension of target forms using rubric.
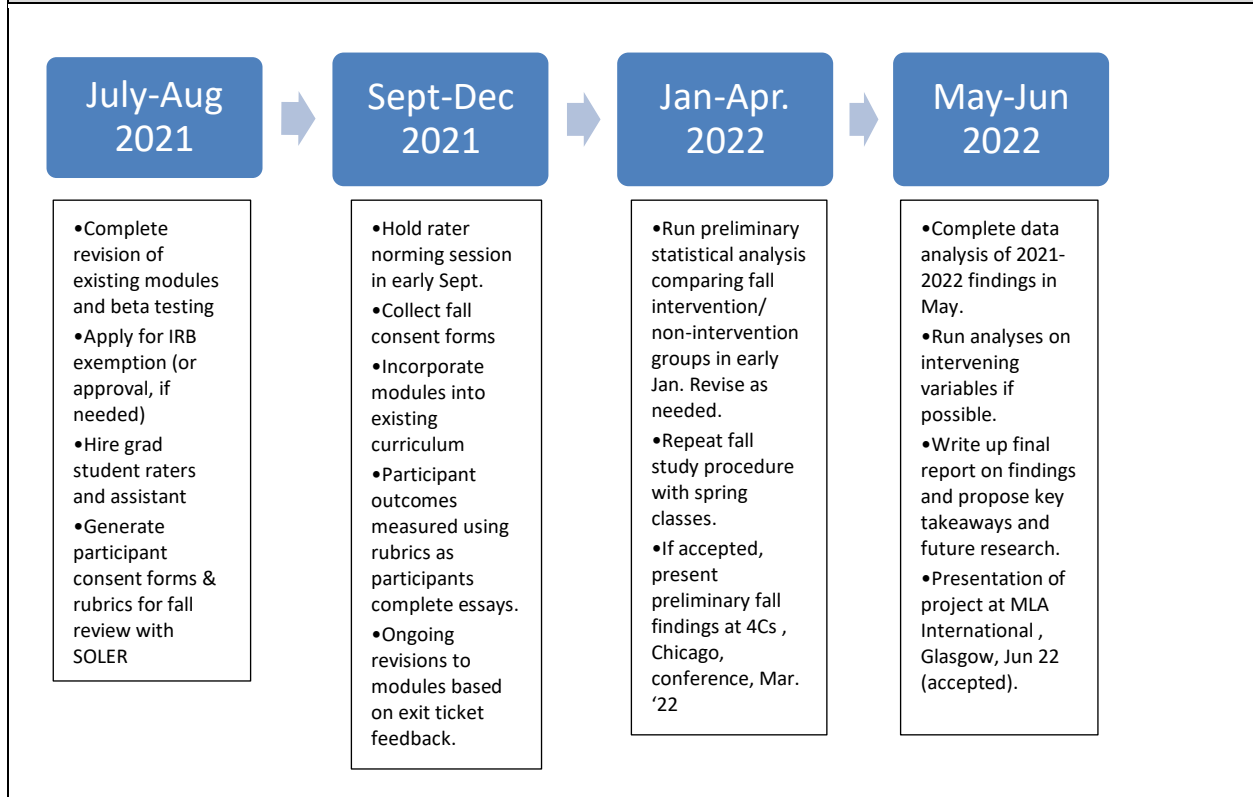
Graduate Student Assistant (1)
•Assist PI in necessary research to support creation of rubrics and surveys
•Assist PI in beta-testing modules
•Can assist as needed in informing potential participants of project and requesting consent to avoid conflicts of interest
•Can download, store, and anonymize/ uniquely identify participant writing and data to avoid conflicts of interest.

Requested In-Kind Support from SOLER
•Support and guidance navigating the IRB exemption (or approval, if needed) process
•Consultation on rubric & survey design, norming session development, and overall project implementation
•Data analysis support, including analysis of intervention vs. non-interventional groups; multivariate analyses of potential intervening variables; inter- and intra-rater reliability estimates.

Section 3: Graphical Project Timeline
Use a graphical timeline to depict the schedule for your project. The timeline should include start and finish dates for your project as well as the dates or periods during which various project tasks will occur. Indicate how you will monitor the effectiveness of the project as it evolves. All elements of the project should be completed within 12 months of receiving funds.

July-Aug 2021	Sept-Dec 2021	Jan-Apr. 2022	May-Jun 2022
•Complete revision of existing modules and beta testing •Apply for IRB exemption (or approval, if needed) •Hire grad student raters and assistant •Generate participant consent forms & rubrics for fall review with SOLER	•Hold rater norming session in early Sept. •Collect fall consent forms •Incorporate modules into existing curriculum •Participant outcomes measured using rubrics as participants complete essays. •Ongoing revisions to modules based on exit ticket feedback.	•Run preliminary statistical analysis comparing fall intervention/ non-intervention groups in early Jan. Revise as needed. •Repeat fall study procedure with spring classes. •If accepted, present preliminary fall findings at 4Cs , Chicago, conference, Mar. '22	•Complete data analysis of 2021-2022 findings in May. •Run analyses on intervening variables if possible. •Write up final report on findings and propose key takeaways and future research. •Presentation of project at MLA International , Glasgow, Jun 22 (accepted).

Section 4: Budget Overview and Justification.
Provide a detailed budget and justification for funds. Funding can be used for expenses such as equipment, shipping, media development, compensation for study participants (typically students), compensation for research assistants, and conference registration. Please mention all other sources of funding, if any. The total budget requested should not exceed the maximum award amount of $5,000.

Type your Budget Overview and Justification text here.

Budget Item	Funds Requested
Graduate Student Raters	$3360
Graduate Student Assistant	$990
Conference Travel Support	$650
Total:	*$5,000*

Justifications:

Graduate Student Raters

In an effort to minimize bias and conflict of interest, participants' writing must be assessed by graduate students familiar with the writing produced in the University Writing Program, but unfamiliar with the participants themselves. The goal of having three raters is to account for disparities in ratings and, hopefully, boost inter-rater reliability. Raters will be paid a flat rate of $1120 for their work; this number is based on the assumption that raters will need roughly 20 minutes to read each essay and complete the rubric; with a maximum of 56 participants, this equates to 56 hours of work, at $20/ hour, or $1120 per rater/ $3360 total.

Graduate Student Assistant

Though modules are largely completed, research and design of assessment tools such as rubrics and surveys still needs to be completed. Additionally, all modules need to be rigorously beta-tested and revised in conjunction with the development of supplemental in-class practices to support student learning. A graduate student assistant familiar with the University Writing Program will assist the PI in these processes, and help ensure that the project is implemented successfully. This assistant can also serve as an uninterested part to present the project to prospective participants, field questions, and anonymize student data for analysis to minimize conflicts of interest. The assistant will be paid hourly at the current ad comp rate for Writing Center consultants, $33/ hour, and will provide an estimated 30 hours of support for a total of $990.

Conference Travel Support

A paper presentation of this project's findings has been accepted at MLA International in Glasgow, Scotland in June of 2022. As of the time of application, round-trip economy airfare from NYC to Glasgow is roughly $650. Support for conference travel will ensure this work can be presented in a respected academic conference and can receive feedback from academic peers outside the university at the time of completion.

July 7, 2021

Dr. Adam S. Brown
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Office of the Vice Provost for Teaching, Learning, and Innovation
Columbia University
201 International Affairs Building
420 West 118th Street
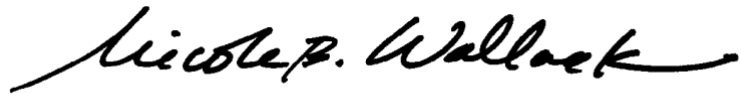New York, NY 10027

Dear Dr. Brown:

I am pleased to provide this letter of support for Vanessa Guida's hybrid learning course redesign, delivery, and data collection for the "Measuring the Learning Outcomes of Self-Directed Rhetorical Grammar Modules for Multilingual Writers" for AY 2021-2022. Were this project to be funded, it would it provide students taking sections of "University Writing for International Students" with much-needed resources to increase the course's efficacy. Perhaps even more important, it would permit Ms. Guida, who co-directs the University Writing for International Studies curriculum development cohort, with data that would permit the Undergraduate Writing Program to evaluate the possibilities for future expansions of our online writing resources for multi-lingual students across courses at Columbia.

As is well known, but worth repeating, 19% of Columbia's incoming class of undergraduates are international students, the majority of whom are multi-lingual; the university ranks fourth in the percentage of such students among U.S. colleges and universities. At the moment, aside from the developmental courses at the American Language Program, our own sections of University Writing for International Students, and limited support available for multi-lingual students in our Writing Center, there is a much higher need for writing support than we have resources to provide. Therefore, this proposed initiative could also help the Undergraduate Writing Program to test the efficacy of asynchronous, web-based materials, courses, and other forms of writing support for writers more broadly—including graduate students and faculty.

The design for this study corresponds with the UWP's curricular principles, and emphasis on both qualitative and quantitative research approaches. It also reflects current best practices in the fields of writing studies, applied linguistics, and writing acquisition for multi-lingual learners.

If there is any other information I can provide, please let me know. Thank you for considering this project, which would not only help Ms. Guida and the UWIS curricular team to improve our course, but also could set the stage for major pedagogical initiatives for the UWP as a whole in the next three years.

Sincerely,

Nicole B. Wallack, Ph.D.
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Columbia University
Senior Lecturer
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