

Summary of UWE Treatment School Progress Reports and “Best Practices” Reports

by Tatyana Avilova (July 2023)

Intervention summaries below include verbatim sections (in quotes) from reports submitted by the schools. We define interventions as “effective” if they were implemented by three or more schools and received primarily positive feedback. “Ambiguously effective” interventions are those that received a mix of positive and negative or mostly negative feedback from the schools. Also in this category are interventions for which we have insufficient feedback because they were implemented by fewer than three schools.¹ We also flag interventions that are low-cost for departments that may be facing resource constraints to implement more ambitious changes right away.

Effective interventions

a. Information flyers, staffing at academic fairs, and updated content for pre-major department information sessions (*Better Information and Role Models/Mentoring*; low-cost)

Several departments created eye-catching flyers (one-page, double-sided) to help advertise the major. The flyers included a list of diverse research questions that economics studies and a selection of upper-year elective courses that the department offers. Schools passed out these flyers at academic fairs and posted them on their websites. Departments also made sure that there was at least one female professor, undergraduate adviser, or upper-year student present for all sessions of academic fairs. Schools reported success with this intervention, as more female students stopped by the economics table, looking to speak with the female representatives, and professors said that the flyer was a great starting point for conversation.

The flyers can also be handed out at department information sessions for pre-majors. A few treatment schools revamped their orientation sessions “to focus more on applications of and interesting research questions in economics rather than logistics.” Focusing on logistics (e.g., course requirements) is useful for students who already know what economics is about and who already think that they want to major in it.² At least one

¹ We cautiously do not classify any interventions as “minimally effective” or “ineffective” as they still may be appropriate for certain schools depending on their institutional characteristics.

² One school covered the following topics at their information session: (1) questions economists ask and current events they work on; (2) “how economists take an analytical approach to problem solving”; (3) courses offered in the department; (4) “encouragement to students who might bypass economics due to ‘math phobia’,” and (5) variety of career paths available with a degree in economics. The department prepared a 44-slide and a 28-slide versions and conducted extensive

school combined this information intervention with a *role model* element by inviting recent alumni to talk about their careers. This school also sent out targeted invitations to the session to students who had done well in introductory economics.

The fixed cost of a flyer is relatively low, but making it visually appealing to students is important. The marginal cost (e.g., updating the list of offered elective courses) of both the flyer and the information session is almost zero. Finding alumni speakers will incur an additional cost. Finally, as academic fairs are typically one-time events at the start of the year, the required time commitment for faculty and/or undergraduate advisers is low.

b. Implicit bias training (*Role Models/Mentoring*; low-cost)

This intervention targets individuals – faculty and teaching assistants – who would act as role models and mentors for students. Treatment schools implemented training sessions with faculty (many of these invited Dr. Amanda Bayer, who ran a workshop during the meetings with the treatment schools’ primary investigators [PIs], to run a similar one for their department) and graduate and undergraduate teaching assistants. Faculty across schools were generally receptive to this kind of training, especially after taking the implicit bias test and learning about their potential unconscious biases. Holding this type of workshop/training before beginning to discuss other interventions may help to convince reluctant faculty about the necessity of diversity initiatives. It is important that all faculty are required to attend to avoid selection bias.

c. More targeted first-year/pre-major advising (*Better Information*)

For this intervention, a department identifies leaky spots in the pipeline that may occur in academic advising for pre-majors. The design of this intervention will differ based on the institutional characteristics of the school and could be low-cost. However, because it typically requires working with other staff or admin at the university, we do not classify it as such.

At one school, academic advising for first-year students who are undecided on their major is done by a college-wide academic center. The department found that the advisers at the academic center had little information on what economics studies/what careers are available to economics majors and at what salaries. The department then conducted a training session with the advisors on the main campus on the “broader application” and “scope of economics” and provided them with pamphlets (similar to those

training with economic advisers on presenting the slides. Presentations were done in all Principles sections and took about 10 minutes of class time at the beginning of the class period.

that may be handed out at an academic fair) that the advisers could give to students who expressed interest in the major. The department commented that this may be their “most effective intervention.” They planned to conduct a refresher session once a year with the advisers as well as outreach to branch campuses.

Another department found that male students were disproportionately assigned to economics for advising and requested that registrar assign first-year students in a ratio that matched the gender ratio of the incoming cohort (which was approved). A third school “corrected some mis-information (sic) that was flowing” from both their department and university’s career services offices.

One more school organized open advising hours before major registration, targeting undeclared first-years and sophomores whose advisers were outside of the economics department (and in many cases also outside of the university’s business school). The department created major checklists and planning pamphlets explaining a student’s various pathways to a major in economics. Overall, the PI reflected that the intervention was successful. The department met with 40 students across four 2-hour advising sessions and received positive feedback from the students. There were also spillovers as announcements of the sessions incentivized other undecided students to reach out to faculty to learn about opportunities in the department. The main obstacle for this intervention was scheduling: advising hours occurred in the evenings at a time convenient for students but that made it more difficult to arrange for faculty to be at the event. The department still scheduled 2-3 faculty (with at least one female faculty) for each of the four nights of advising.

d. UWE student clubs (*Role Models/Mentoring*)

This was one of the most popular community-building interventions implemented by the treatment schools. Departments organized clubs that either specifically focused on recruiting women to economics or opened membership to all students but made promoting diversity in economics one of its central missions. Initial members were typically recruited through word-of-mouth/personal invitation emails sent to students in upper-year courses. Clubs also self-advertised at club fairs. Clubs met regularly throughout the semester and organized events such as career panels, meet-and-greet sessions with alumni, and student conferences.

Both professors and students overwhelmingly provided positive feedback. One PI wrote: “[...] I heard from several of our new grads what a difference the group made in their sense of strength and well-being not just in Econ, but in their lives going forward. They are making friends and associates that will last their lifetimes.” The first *UWE*

conference, which kicked off a series of annual diversity-focused conferences for students and faculty, was organized after a student at one such UWE club enthusiastically reached out to us by email with the idea.

This is a resource-intensive intervention. Successful clubs need at least one faculty adviser who can be involved beyond administrative requirements for supervising a student club; department funding for student activities (e.g., refreshments and printed advertising for events, invited speakers, field trips, etc.), and a dedicated group of students to lead the club. Schools had mixed success in ensuring continuity of club leadership beyond the initially recruited cohort of students. This means that departments should keep recruitment and engagement of younger students in mind throughout the year. As clubs become institutionalized – develop a schedule of regular programming, establish a network of group alumni, and become more well-known across campus – they will become easier to sustain. Schools could also work with established organizations on campus (e.g., undergraduate Economics Society or graduate Women in Economics groups) to organize joint activities.

e. Invited speaker sessions (*Role Models/Mentoring*)

Alumni panels on diverse career paths and guest faculty seminars on topics relevant to students can expose students to a more diverse group of economists and increase the probability that they are inspired by someone like them to continue in economics.

Porter and Serra (2020) provide causal evidence of the effectiveness of this type of intervention. The effectiveness could in part be attributed to the careful process through which the department selected especially inspirational speakers. Faculty and students collaborated on shortlisting 10 alumni with outstanding achievements and fields of work outside of banking and finance, 8 of whom were then interviewed by students for 20-30 minutes each to evaluate their “appeal, charisma, and overall fit for the job of inspiring first year (sic) students to study economics.” The interviews were also recorded and evaluated independently by faculty. Three alumni were then contacted by the department to arrange for a visit on specific dates in the spring semester, with two eventually speaking with the students. The visits also required coordination with the Principles instructors. Overall, the logistical burden of the intervention was quite high, and the department did not repeat this exact intervention going forward. However, because of its success SMU worked on incorporating alumni involvement into department activities in other ways.

Some departments may not need to host additional events but should consider who is currently being invited to speak. One school that typically hosted about 24 seminars throughout the semester made sure to schedule more female presenters, increasing their

number from 1-2 in previous years to seven. One department reported an initially low response to such events from students but then personalized invitation emails to help mitigate low attendance numbers. Most departments do not keep alumni registries and had to reach out to the school's alumni relations office. Departments that have available funding and resources in their area could consider bringing the students *to* the career panel instead by organizing a field trip to a think tank, Federal Reserve Bank branch, or another research institution. A similar intervention, although classified under *Content and Presentation Style*, is guest lectures by various department faculty in introductory courses.

f. Novel economics course (*Content/Presentation Style*)

Although interventions to change curriculum and pedagogy are the most labor-intensive interventions, four schools nonetheless began to offer five new economics courses as part of their curricula:

- a. A 1-credit pass/fail section supplementing Principles³, capped at 25 students⁴;
- b. A 2-credit pass/fail survey course that “focuses on issues of interest to women and students from underrepresented groups, such as health disparities, wealth and income inequality, economic development, housing, marriage and the family and education”;
- c. Feminist Economics, a 200-level course (no prerequisites), cross-listed in the Gender and Women’s Studies Department;
- d. A 0.5-credit 200-level survey course (introductory micro and macro prerequisites) covering a wide variety of economic topics (e.g., impact of age distribution on wages, marriage markets, policies to alleviate crime and traffic, etc.), capped at 20 students;
- e. Contemporary Problems in Economics, a 3-credit elective course that covers “[c]urrent issues of government economic policy, primarily microeconomic: energy, income maintenance, labor markets for minorities and women, government regulation, health care, and others.”

³ The section met every other week and included two “meet the faculty” nights; one “meet the grad students” night; one session where graduate students led a coding exercise; one session that featured a panel of 6 recent department alumni; a meeting where the PI/course faculty reviewed department course offerings and hosted a Q&A session, and one meeting where student services staff facilitated small groups in planning where to take this initiative in the future.

⁴ All women enrolled in Principles for the semester (340) were contacted about participating in the section. 81 students expressed interest in the section. All underrepresented minority students were invited to participate. From the remaining students, those who answered 0 (no interest) or 10 (definitely plan to major) to the question “How likely are you to major in economics?” were excluded from the list, and the rest were randomized to participate.

Both survey courses were taught by a roster of at least 5 faculty, half of them women. The PI at the department offering the 0.5-credit survey course reported that the course was a hit with both faculty and students.⁵ In the supplemental Principles section, at an informal discussion near the end of the semester over two-thirds of the students expressed interest in majoring in economics, many of whom had not planned to do so at the start of the semester. All schools that implemented a new section/course still offer them. Even if these courses do not disproportionately attract women, this demonstrates the broad appeal of such topics in economics among students.

Departments may receive pushback from their faculty about changing curriculum or instructional methods because of the high cost of interventions. Offering survey courses with low/no prerequisites that are co-taught by multiple faculty reduces the burden on any one person, especially if the faculty can teach topics related to their research. At a school where multiple professors teach Principles sections, faculty gave guest lectures in each other's courses. In addition to exposing students to diverse topics, this approach "[gave] students a way of seeing the different teaching styles of professors in the department as a way of getting [them] excited about taking courses with faculty they have not had in class yet." At least one department considered an alternative textbook for its Principles courses. Other targets for course reform are classroom activities and assessments.

g. Student outreach to high schools (*Role Models/Mentoring*; implemented by one department⁶)

As data from Adams and several treatment schools shows, many students make up their mind about economics even before they arrive on campus. Moreover, being "late to the game" can significantly impact the student's ability to enroll in courses and complete major requirements.⁷ To address this leaky point in the pipeline, the UWE club at one

⁵ This was a 7-week course, taught by one of 7 faculty each week. Faculty were extremely enthusiastic about the intervention and more faculty expressed interest in helping to teach the course than there were weeks for the course. When inaugural enrollment opened for Spring 2016, the course filled up almost immediately.

⁶ We include this intervention in the list of effective initiatives even though it was only implemented by one department because the American Economic Association (AEA) Committee on Economic Education has added this program to the list of effective high school outreach programs.

⁷ This is related to the issue of departments' capacity constraints. One PI observed that the problem of getting more women in economics often stemmed not from the lack of interest but that "women are less likely to know that they want to take econ from the 'get go'" and so were often too late to enroll in the oversubscribed classes. Another PI likewise explained that their "intermediate theory courses frequently turn away interested students during the enrollment process" and that a recent "Principles course was almost entirely sophomores." This is not uncommon, as yet another PI commented that "classes like intermediate micro, intermediate macro, econometrics, and money & banking are full to the limits of the fire marshal and [their] capacity to staff discussion sections with

department began to do outreach to local high schools. The goal was to provide students with better exposure to what economics is and to show that it is socially empowering. They specifically addressed math requirements, targeting students before they made a decision about taking calculus (so that they do not give up on math courses too early) and providing an option for quantitative thinkers who are not interested in other STEM fields. Outreach activities were conducted via interactive presentations, blogs, videos, and hands-on “regression lab” tasks.

Ambiguously effective interventions

a. Targeted invitation to take further economics courses/to major in economics (*Better Information*; low-cost)

This was one of the most common interventions in the group, implemented by more schools than just those who ran their own RCT. While most reported some positive feedback (students following up with faculty, students enrolling in more economics courses), only one school found supportive causal evidence that showed an increase in the number of women majoring in economics (Li 2018).⁸ While most schools selected “nudge” recipients based on their Principles grade only, one school also included the student’s GPA in their consideration. The same school also excluded students with a declared major unless they were in their college or had declared a “General Studies” major, to avoid the perception that economics was trying to “poach” students from other programs.

In a related intervention, schools can target first-years even prior to their arrival on campus. One department received permission from the deans to include information in the first-years’ orientation materials (a flyer in the official orientation packet and a paragraph in the last email students receive before arriving to campus) to give them an idea of the broad set of research questions that economics studies. They reported that the number of women enrolled in introductory economics increased by over 50% in the fall semester.⁹

graduate students TAs.” The problem of women’s underrepresentation in economics seems to be as much about increasing interest in the major among students who do not have good prior information about economics as it is about getting selection right into the major.

⁸ In addition to the RCTs conducted by six schools in the treatment group, Oregon State University, one of the control schools, conducted a two-stage information and “nudge” study targeting Principles students (Pugatch and Schroeder 2021). They find that only a simple message with information about the major had a significant effect on male students majoring in economics (increasing their number), and that none of the message interventions had a significant effect on female students. The authors suggest that “nudge” fatigue among students may be a factor in the interventions’ lack of success.

⁹ The number of men enrolled in Principles increased by 15 percent. Women’s incoming cohort increased by 10% from Fall 2014 to Fall 2015, potentially accounting for only a share of the increase in the number of women in the course.

Although this letter was sent out to all students (and is therefore low-cost in terms of identifying students to target), it does nonetheless require substantial buy-in from the administration. At the treatment school in this example, while the deans were eager to support the initiative in the main treatment year, they were reluctant to continue to do so in subsequent years. There was also pushback from other departments as they were wary of economics (already one of the largest departments on campus) being shown favoritism by the administration.

b. Community building and support networks: tutoring/mentoring by older undergraduate students, peer study groups, and online groups (*Role Models/Mentoring*)

Results for interventions that focused on building community and support networks between students were mixed.

Tutoring services were typically reported as successful. One school started a tutoring center for students in introductory and intermediate courses that was “well received by the new tutors and by the students.” Although the organizers did not keep track of the gender of the students who participated in the tutoring services in previous semesters, they believed that it was effective in creating a more welcoming environment for female students. The tutoring center was staffed with one female and one male tutors in Fall 2015 and by two female tutors in Spring 2016. Another department modeled their economics tutoring service after the school’s very successful math and science resource center. The tutoring service ran three nights per week, staffed by 2 tutors, and averaged 5 students per session (min: 0, max: 16). Tutors reported that “many of the attendees were repeat visitors”, but also that “the composition of attendees was more female and more diverse than the major as a whole.”

Study groups seemed much less successful. The same department that followed the math and science tutoring model also assigned interested students in Principles to study groups. Although 60 students (out of 240 students enrolled in the course) expressed interest in and were assigned to study groups, only one of the 9 students who responded to the end-of-semester survey said that they had met with their study group, and no one had met with their study group more than once. A different department likewise reported that the study groups for students in introductory and intermediate courses did not gain traction. Students do not seem to have an incentive to meet with other students outside of their own friend study group unless it was for a course assignment.

The use of online tools in this context centers on promoting engagement with individuals/groups in the department rather than simply advertising department events.

Success with academic digital discussion boards was mixed. One department found that forums on Piazza for lecture classes were successful, with students enthusiastically posting homework- and lecture-related questions. However, a similar discussion board for students writing senior essays, with the goal of getting feedback from classmates and non-advising faculty, was a “complete failure.”¹⁰ Another department used discussion boards/social media beyond academic conversations. Their UWE club created Facebook and LinkedIn pages and also established a Google group where students could participate in course-focused women’s study groups or share book costs or tutoring. These forums were perceived as successful.

The success of these initiatives relies on student buy-in. Students may hesitate to reach out for help unless they know the person is expected to help them (upper-year tutor) or it is for an explicit purpose (discussion boards for specific courses or a message board for a club). One student suggested scheduling a dedicated night for study groups to meet to overcome the social barrier to meeting.

c. Meet-and-greet/networking sessions with faculty (*Better Information and Role Model/Mentoring*)

Opportunities for students to meet their faculty in a professional setting outside of the classroom can make students feel more welcome in the department. They also increase the likelihood that the students will be able to establish an advising or mentor-mentee relationship with a faculty member through more opportunities to interface with professors whose classes they may not have been able to take yet. This is especially important if female and URM faculty in the department are more likely to teach upper-year electives rather than introductory and intermediate courses. One institution that organized a student-faculty mingling event did report that faculty observed “increased foot traffic” at their office hours after the event. However, because of faculty concerns regarding future time commitments and resulting reluctance to participate in similar interventions, we list this intervention in this category.

d. Updating the department website and promotional videos (*Better Information*)

It is difficult to collect data to measure the impact of this intervention, but as the department’s website is often one of the first impressions that a student may get about the discipline’s climate, culture, and course content, its importance should not be understated.

¹⁰ Only 5 students posted to the board all year, three of whom had done so after personal outreach by the faculty running the discussion board. All students received good feedback on their papers. We do not have information on why other students, who asked for additional help on their essays outside of class but not through the board, did not use this resource.

At least one department that focused on revamping their website found that the course information and major requirements were outdated. Other departments updated website photos and videos to feature more diverse students, professors, and economists. Many departments provided a link to or embedded the AEA video on diverse careers in economics on their website, as the video had already been produced.¹¹ Others created their own videos, interviewing diverse students and alumni about their experience in the department, why they had chosen to major in economics, and the application of economics to their careers. The departments also provided information about the application of economics, a diverse range of careers students can pursue, and average earnings for an economics major.

e. More research opportunities for students (*Role Models/Mentoring*; implemented by one department)

Students working as research assistants can learn firsthand about the breadth of questions that are studied by economists and about other aspects of the discipline (e.g., applying to graduate programs, additional research and career opportunities, publishing, etc.) from their supervisor. To the best of our knowledge, one school worked with faculty to create additional openings for students to work as RAs. Students were “extremely enthusiastic about research opportunities” and all postings received “numerous inquiries.” However, this intervention was also “time consuming for faculty.” Departments with a graduate program could reduce faculty workload by having PhD students supervise RA work (which could also provide valuable mentoring experience and research support for the PhD students). Overall, this intervention may not be suitable to targeting a large number of students early on in their economics career, but it could be extremely beneficial to a handful of students further along in the program.

Even if expanding RA opportunities may not be feasible in any way, departments should consider the wording of job postings and which students are currently applying for the positions. 21.6% of women compared to 12.7% of men do not apply to jobs because they don’t think that they will be hired and they do not want to put themselves out there if they are likely to fail; 15% of women do not apply because they are following the guidelines about who should apply, twice as many compared to men (8.5%) (Mohr 2014). Female students may be more likely than male students to think that they need to check all the requirements on a posting/have all the skills that they will use on the job *before* applying. Departments should consider explicitly encouraging students to apply for a position even if they do not meet all qualifications, either in the text of the posting, in an email to students,

¹¹ The video “A career in Economics... it’s much more than you think.” is available here: <https://www.aeaweb.org/resources/students/careers/video/career-in-economics>

or via in-class announcements. If faculty observe talented female students in their courses, they can also email them directly to encourage them to apply for these positions.

f. Proliferation of economic news (*Better Information and Presentation Style*; implemented by one department)

One department utilized television displays around campus to share economic bulletins/flyers.¹² The flyers were displayed for about 10 days each on the television screens, with one to three new flyers each week. These were well-received by faculty and students. For example, in Principles of Macro, “[the course instructor and students] extensively talk about economic data and thus [the] students are able to appreciate the importance of the economic data flyers and the ease with which they help them keep on top of economic news.”

g. Engaging teaching resources provided by the university/college (*Content/Presentation Style*; implemented by one department)

One department took advantage of a college-wide initiative to make teaching more inclusive and accessible to students. The initiative, called Connections, was guided by the concept of “Full Participation”:

“Full Participation is an affirmative value focused on creating institutions that enable [community members], whatever their identity, background, or institutional position, to thrive, realize their capabilities, engage meaningfully in institutional life, and contribute to the flourishing of others.” (Sturm 2006, 2011)

The department drew on various resources offered by the campus’s community learning center and Center for Teaching and Learning. Two members of the department participated in a year-long workshop on universal design and then applied the principles they learned to their upper-year elective courses. As the PI noted, this particular intervention would not recruit students at the start of their college careers, but it “should help attract and retain them as the department develops a reputation for employing the kind of pedagogies that routinely draw similar students to sociology and other related social sciences.” Economics should not attract students to the major on the merits of a single interesting course or one charismatic faculty member but rather by the strength of

¹² The department hired a female student to be responsible for going through daily economic news, selecting the most interesting items, and designing electronic flyers that could be displayed on the TVs across campus. The news flyers could be divided into three categories: (1) Economic Data, information on current data releases from the GDP report, CPI Report, etc.; (2) Interesting New Stories/Articles, a quick synopsis of a recent article and how it links to economic concepts taught in class, and (3) Featured Economist, flyers introducing a famous economist.

the entire department. To that end, all faculty also used the Full Participation Assessment Tool to evaluate and revise their pedagogies and the content of their courses to make them more inclusive.

Ultimately, although women may be drawn to the discipline by the prospect of good careers and the presence of supportive mentors, course content needs to be engaging and relevant to convince them to stay. Inclusive pedagogies need to be a feature not just in introductory courses but at all levels of instruction. Departments can utilize the resources provided by their institutions and model pedagogy on that of other disciplines. More evidence on the effectiveness of various teaching methods and course assignments is also available on the AEA's Diversifying Economic Quality (Div.E.Q.) website (Bayer 2021).

h. Additional classroom considerations (*Content and Presentation Style*; various interventions implemented by one department each)

Departments should provide pedagogical training (either in-house or through other centers on campus) not only to faculty but also to (graduate and undergraduate) teaching assistants. At least one department remarked that TA sections were dominated by loud and rude students and that some TAs were unable to handle such situations. Especially in large lecture courses, students may get more interaction with their TAs rather than faculty, and their impression of the course will be largely affected by their section experience. It is important that not just the professors but also student instructors know best practices for inclusive teaching.

Classroom location can be as important as class content. One department switched some of its Principles sections from the business school building to another location on campus after some students remarked on the condescending attitude of the business students toward first-years. Although faculty were supportive of this intervention, in practice few volunteered to have their section moved from the more well-equipped business school building.

References

- Bayer, Amanda. 2021. Diversifying Economic Quality. American Economic Association Committee on the Status of Minority Groups in the Economics Profession. <http://diversifyingecon.org>
- Mohr, Tara Sophia. 2014. "Why Women Don't Apply for Jobs Unless They're 100% Qualified." *Harvard Business Review*. <https://hbr.org/2014/08/why-women-dont-apply-for-jobs-unless-theyre-100-qualified>
- Sturm, Susan. 2006. "The Architecture of Inclusion: Advancing Workplace Equity in Higher Education." *Harvard Journal of Law & Gender* 29: 248-98.
- Sturm, Susan. 2009. "Activating Systemic Change Toward Full Participation: The Pivotal Role of Boundary Spanning Institutional Intermediaries." *Saint Louis University Law Journal* 54: 1117-137.