A Year of Teaching Squares: How Cross-Disciplinary Peer Observations Improve Your Teaching

Jacob Martens (CAC) and Jutta Heller (SAM)
School of the Interdisciplinary Arts and Sciences, University of Washington Tacoma

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Abstract
Faculty at many colleges and universities across the United States are creating Teaching Squares, a community of faculty dedicated to observing cross-disciplinary colleagues, not to evaluate or write letters but in order to reflect on how observers can improve their own teaching practices. Besides observing, this process involves meeting with partners to discuss best practices.

This report discusses how almost thirty SIAS faculty participated in our pilot Teaching Squares program over the 2017-2018 academic year. It provides a sampling of engaging teaching methods going on in our classes, describes how faculty incorporated new methods into their own teaching, and reflects on what faculty have learned from participating in Teaching Squares.

We invite faculty from across UWT to join us in a second year of Teaching Squares. How can Teaching Squares invigorate your teaching and strengthen our community?

Interested faculty and 2017-2018 Teaching Squares participants are invited to join us at our year-end Teaching Squares celebration meeting on Thursday, June 7th at 12:30 to 2:00pm in GWP 320. Or you can follow this link to sign up for Teaching Squares now.

A word of thanks
We’d like to thank all Teaching Squares participants for contributing to the SIAS Teaching Squares Pilot. This could not function without you. We’d also like to thank Cynthia Howson, Heather Heinz, and LeAnne Laux-Bachand, for keeping up momentum behind this report through Winter term, and for helping to create the categories for the kudos and what to watch for in future observations.

We would also like to thank Turan Kayaoglu and the Office of Research for supporting our work and hosting the Faculty Development Workshop at which this report is shared and discussed in detail on Thursday, May 31, 2018, 12:30 – 1:30 pm in Tioga 307b.
Pilot program SIAS participants* (by quarter and SIAS division)
*all are full-time or part-time faculty in SIAS

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History and background
Jacob Martens and Jutta Heller were among the participants of the report out from the Teaching Evaluation Campus Fellows group on May 9, 2017, titled “Improving Teaching Evaluation at UWT”, presented by Kim Davenport, Tom Koontz, and Sushil Oswal.

Jutta Heller attended a South Sound Science Education Research in Practice (SSSERiP) event at Pacific Lutheran University (PLU) on February 28, 2017. At this meeting, the Biology faculty at PLU presented their Teaching Squares program, and Jutta thought it to be a great idea that she wanted to bring to UW-Tacoma. Jutta
contacted Amy Siegesmund at PLU who was very happy to share her Teaching Squares materials.

Jacob Martens participated in Teaching Squares in fall of 2013 while he taught at Green River Community College. Jacob enjoyed the experience so much, he started observing teachers independent of Teaching Squares with this question in mind: What can I learn about teaching by observing any teacher? When Jacob heard the report about “Improving Teaching Evaluations at UWT,” he asked at the meeting if anyone had any interest in Teaching Squares. Jutta and Jacob connected and agreed to start a Teaching Squares community in SIAS.

Jacob contacted Julie Moore at Green River College, and she was also happy to share the materials she used when she coordinated Teaching Squares, some of which had been passed on to her from other Washington State community colleges. Replicating the community and culture of Teaching Squares at other colleges, Jacob and Jutta decided on the UWT Teaching Squares outcomes:

- Re-energize one’s teaching
- Reflect on one’s own teaching practices
- Share cross-disciplinary pedagogical perspectives
- Build a community
- Create collaborative connections with faculty members in other disciplines
- Nurture and support ideas for scholarship in teaching and learning

**How we conducted the pilot (methodology)**

In late spring quarter 2017, interested SIAS faculty were asked to indicate their interest in the Teaching Squares for fall and sign up via a Google form. Faculty were reminded to sign up once again during the fall SIAS retreat in September. At that point, Jacob Martens collected all of the information and arranged the actual teaching “squares”, i.e. groups of three or four cross-disciplinary faculty with compatible teaching schedules who would be able to visit each other’s classes during non-teaching times.

Faculty then arranged among themselves to visit each other’s classes, either at a previously agreed-upon date, or as a surprise “drop-in”. At the end of the quarter, faculty met within their square (time allowing), and/or with the larger group, to reflect upon effective techniques they had observed and shared these with the group. Faculty were also asked to consider how these observations may impact their own teaching. This process involves the best aspects of peer evaluation — observation and discussion — while excluding judgment and evaluation.
How Teaching Squares typically work:
● 4 members in the square
● 3 observations, ideally observing for the entire class period, all completed within a two- to three-week timespan
● 2 meetings with larger group (pre and post observations)
● 1 meeting with the square (either over lunch or coffee, or as a breakout during part of the large-group, post-observation meeting)
● 0 judgments or evaluation letters

Our pilot adaptations:
● 3-4 members in the square
● 2-3 observations, at least an hour each, all completed between the 3rd and 9th weeks of the term
● 1 meeting with the larger group
● 1 meeting with the square or individual meetings with observation partners as available
● 0 judgments or evaluation letters (unless faculty make separate arrangements)
● Lots of positive kudos

Our UWT Teaching Squares differed from other Teaching Squares programs in a couple of ways:
1) It was quickly determined that UWT faculty members’ busy schedules obfuscated the need for the pre-observation meeting to discuss the Teaching Squares program. By setting up the squares online and reinforcing the non-judgmental nature of the observations, faculty could get started on their own once assigned their partners and at their own pace before the end of the quarter.

2) Because it is also difficult for faculty to meet at the end of the quarter, we offered a way for faculty to share their positive experiences through the collection of kudos and reflections in a Google form. The comments in these forms comprise much of the remaining text in this report and highlight impactful practices observed by the Teaching Squares participants.

Ideas for future improvements:
With more participants, we could feasibly have more traditional squares and more robust quarter-end meetings. Potentially due to the longer time allowed for observing and the online materials taking the place of the initial meeting, we did lose some participants to other priorities (searches, grading, other time crunch commitments), or there were some last-minute observations in less than ideal conditions for observation. Sometimes there were unreciprocated observations. To alleviate this, we will aim to
complete observations before the end of the 5th week of the term, follow guidelines in the Teaching Squares handbook, such as sharing syllabi and lesson plans for observation day, and inviting our observers to focus on something we want them to focus on, as well as reminding them to record what they notice as positives. We will strive for the 4,3,2,1,0 model described above, and keep records of the kudos to share with the UWT faculty at the end of spring quarter in 2019.

Results of the kudos report

In the kudos report, participants were asked via a Google form to provide voluntary responses to the following questions, with the understanding that they would be able to review and edit this document and that the audience would be SIAS and the campus community:

a) Kudos: Explain effective teaching techniques you observed.

b) Describe how observing others in your group impacted your teaching this quarter or in subsequent quarters.

c) What did you learn by observing our students?

What participants said about being involved in Teaching Squares:

- Cynthia Howson: "I really experienced group dynamics as a student, which is insanely powerful. Being observed made a big difference for the first time too. Allowing myself to be disappointed in front of a peer is creating better accountability and a deeper discussion of what I need to do differently to promote better student presentations. The combination of observing, being observed, and discussing our challenges is just starting to give me ideas for future lessons. The realities of group dynamics are crucial and having time to just observe them (without other obligations) helps me think about managing them better. We learned that we all struggle with the same things - obvious but important to internalize and discuss more explicitly.

- Andrea Modarres: I came away with a newfound respect for the varied fields and disciplines our students navigate every day.

- Will Burghart: Well, not through observing, but through the desire to not allow a fellow teacher see a dead section I implemented two reforms: first, keeping a running/dynamic speaker to be list keeper on the board that both allowed for comments and impromptu dialogues about various discussions (and let me check it for participation later). Second, in my core class, I started writing questions that would be displayed on the PowerPoint which they would talk in
groups/not see before class. They were given these questions after a general discussion, so this allowed students to express their own views on the reading and then focus on particular elements that I wanted them to (and many times these coincided/allowed for more in-depth discussions).

- LeAnne Laux-Bachand: I was reminded of all the different ways students can look and be engaged with course material, from working on problem sets or questions in groups and taking notes to laughing at an instructor's jokes and participating by volunteering verbally or by writing on the board.

- Emily Cilli-Turner: I realized that many of my TCORE students were also taking other TCORE courses at the same time and it reinforced the need for Core instructors to talk to each other.

- Heather Heinz: Every time I have a visitor to the classroom, it reminds me to look at my lesson plan from the point of view of the students: what will they be doing, minute to minute? If there is ever a stretch of time where the answer to that question is "sitting and listening to lecture," I know I need to interject more active learning. So, while Teaching Squares is not an evaluative process it does encourage me to self-evaluate, and improve.

- Marc Nahmani: I learned that behavior of students seems to be tied to their year - freshman/sophomores react differently to a similar engagement tool vs. juniors/seniors. In addition, I think students adapt their behaviors quite strongly to a professor's style - something that's very hard to notice without watching students in others' classes.

- Haley Skipper: Our faculty is awesome and doing lots of cool stuff in the classroom! Through Teaching Squares, I observed and then discussed new pedagogical techniques that could possibly work for my own classes. I also really appreciate all the informal feedback from my peers!
What faculty observed about effective use of technology:

- Marc Nahmani: I thought that Jenny Quinn's use of a tablet to illustrate math problems on the fly was innovative, and I'm going to look into using that in lieu of a whiteboard for recording my lectures in Panopto.

- Andrea Modarres: Jack Vincent used PowerPoint with embedded videos that I think helped make them engaging.

- LeAnne Laux-Bachand: I would like to try using more video of "real world" examples to illustrate concepts, to try iPad or other new technology, and to physically embody/demonstrate a course concept in a creative way. In Emily Cilli-Turner's course, I observed great writing on the board (pre-calculus functions), applied questions (such as using their knowledge to answer questions about Ferris wheel revolutions), and movement (walking around to check in on students as they worked).

- LeAnne Laux-Bachand: In Jutta Heller's course, I observed great use of slides and media (including a check-in about SLOs covered for the day and showing parts of a documentary about key points in the history of smallpox), small group and whole class conversations (based on a quiz and other questions that were posed), and writing on the board (students put up questions and interesting points from the reading).

- LeAnne Laux-Bachand: In Danica Miller's course, I observed great writing on the board (including a family tree for characters in the novel they were studying), reading aloud (a passage from the novel), and presenting of historical context (to better understand the novel in light of relevant laws, the author's biography, and critical reception to her writing).

- Heather Heinz: Both of the classes I observed had zero (0!) use of PowerPoint slides. Instructors provided structure for the day in the form of PDF handouts the students had access to ahead of classroom or in the form of physical handouts given the day of class. Instructors balanced directing students' attention to verbal/chalkboard explanations and to the handouts themselves, which guided the students through group activities. In this way there was structure but focus on what the students were doing, not on receiving information from static slides.

- Jutta Heller: I observed my colleagues (Leighann, LeAnne, Danica, Emily) use the whiteboard very effectively (using it for reminders, review questions, key topics etc.).
- Jacob Martens: Leighann Chaffee wrote lecture notes on the board in outline fashion in order to review materials covered in the previous class. By writing out the notes, she slowed down and involved students and their questions on previous materials before going on to new materials. Then she switched to PowerPoint for the new materials. During the projected section, she played a TED Talk relating to the lecture and asked students to write down a take-away message in their notes while watching.

- Heather Heinz: Rita Than used a website for manipulatable 3D visualizations of the data being discussed. She also used group worksheets, and she provided a skeleton document with blanks for scaffolded note-taking. Structuring class time around activities students will be engaging in resulted in more than 50% time as active work.

**What faculty observed about metacognition and study skills:**

- Jacob Martens: Jutta Heller returned a 300-level Molecular Biology exam with a metacognitive reflection called an “Exam Wrapper.” Students had filled out sections pertaining to their study skills before the exam, their emotional state during the exams. Now that they had test results and answers, they reflected on how they would adjust their study skills to improve next time. I plan on modifying this into an “Essay Wrapper” that might help students reflect on and take responsibility for their research and reading practices, as well as the time they take to write and revise their papers.

- Heather Heinz: Shubha Rajopadhye used a pre-printed packet with the barebones structure of the discussion and plenty of space for students to write out their own notes, corresponding to the notes provided by the instructor using the document camera. This provided a model to the students for how to organize their notes.

- Jacob Martens: Rose Njoroge’s cognition class started by reserving a few minutes for students to clear their minds and free write or free draw anything they remembered from the assigned chapter reading. After this, I assigned free drawing in the first few minutes of my Core graphic novel class as a way to recall important moments in the assigned reading and as a place to begin small-group conversations about what they read. I look forward to experimenting with drawing as a form of reading assessment and boosting engagement. I’ve also experimented with having my students draw more in general as a result of
observing Rose’s course. Rose also presented cognitive benefits for students to take notes by hand rather than by computer, which has me reconsidering my use of computer in notetaking situations myself.

**What faculty observed about active learning and engagement:**

- **Heather Heinz:** Observing mathematician Rita Than reminded me to push students hard on justifying their answers logically, on tying back to foundational information. I already do this to a degree, but it was good to be shown how much further I could push this Socratic inquiry. I also observed the repeated use of the same example, allowing students to become more familiar with a particular context and then using that context to illustrate a variety of related phenomena that expanded understanding of the more generalized system. I will be reflecting on the examples I choose and how to use them more broadly to show students how extrapolate patterns from a convenient example.

- **Jeremy Davis:** One of the most unique and interesting experiences I had was watching a very engaged Core course. LeAnne Laux-Bachand called on random students to participate in very easy tasks (reading off of slides). What this meant was that even the least prepared student would be ready to participate in a meaningful way to the class. I think that this aspect of the class was probably a big part of why all the students seemed so engaged.

- **Jacob Martens:** Heather Heinz uses long-playing instrumental music (such as jazz, blues, video game soundtracks) to provide working background music during in-class group work. Since then, I have experimented with playing music in class while students worked and they seem to like it.

- **Jutta Heller:** I plan on improving the writing peer-review process in one of my classes and implement more "student acting" in my classes.

- **Emily Cilli-Turner:** Jutta Heller did a great job going very slowly and showing lots of examples and videos on the day I observed her, which I think is crucial for Core students. The video on antibiotic resistance was really cool. Leanne did a great job having her students interact a lot in class, both with the material and with each other. She also had students present at the front of the class, which is a great active learning technique.

- **Jeremy Davis:** Our students are definitely more engaged when they are actively solving problems in class.
• Marc Nahmani: I also thought Jeremy Davis’s use of ‘driving’ a topic by introducing it through the beginning of a video clip, then having a short discussion and illustrating the conclusion/answer to the problem with the end of the video.

• LeAnne Laux-Bachand: Jeremy Davis engaged every table of students by calling on them or posing questions to them. I loved how he used a variety of technology, including maps, photos, video, tables, and charts to convey species area isolation and other concepts. I also liked how he made the equilibrium model of island biogeography clear through a tactile simulation (the students threw candy onto a piece of butcher paper with various islands drawn on it), and he made charts of their data, which they applied to the concepts they’d discussed.

• Meg Henderson: I observed a lecture on the 5 canons of public speaking. It was awesome because the instructor helped students construct the tenets for themselves as far as they were able (the students actually knew quite a bit about what good talks involve, but she helped them organize and connect the fragmentary knowledge that they had.)

• Jacob Martens: In Lauren Wugalter’s organic chemistry class, student volunteers helped demonstrate the strength of different molecular bonds by linking arms; Lauren would pretend to be another molecule and help the students determine the strength it would take to separate the students. At the beginning of class, students were working on a problem on the board before class even officially began. Observing Lauren inspired me to start developing a variety of problems or discussion questions that engage students before class begins, or to design activities that get students standing up and moving around in class.

• LeAnne Laux-Bachand: It was interesting see group conversations/work groups in action. I learned the variety of ways it can look, sound, etc., when students are working on a problem that genuinely engages and challenges them.
What faculty observed representing effective group work

- Heather Heinz: UWT students continue to impress me with their willingness to turn to a neighbor and discuss. Listening in on extended (1 hr.+) structured group work in Rita Than's and Jacob Martens's classes showed me that many students can and will take the lead in making sure their peers are on task and addressing the work at hand. The students are willing to challenge each other's ideas in constructive ways and give each other useful feedback. It's a good reminder not to underestimate the value of structured group work.

- LeAnne Laux-Bachand: In Marc Nahmani's worm lab, I admired how he checked in with each lab group, asking questions to guide their experiment and/or data-collection, and offering suggestions where they seemed off-track.

- LeAnne Laux-Bachand: I admired how Jenny Quinn guided the class into understanding the correct answer for a problem, how she gave student's ownership over the material by calling on them, having them work in groups to solve problems, and presenting their questions or answers as theirs (e.g. "Derrick's comment"). I also loved how she did dance moves/arm motions to demonstrate exponential vs. log graphs.

- Jutta Heller: In all of the classes I visited, I learned that students are very willing to discuss questions or work through problems in teams of two or three (with whomever is sitting near them). I also noticed that some students at the back of the room can be extremely engaged, while others not so much.

- Rita Than: Heather Heinz started the class with reminders of upcoming assignments and exam. She asked lots of questions during the lecture, and students responded to her questions enthusiastically. Also, Heather had her students work on a worksheet in groups, then two groups with the same assigned questions merged together to exchange their answers. After observing Heather's class, I tried the group merging technique in my linear algebra classes. I could see that students were excited when discussing their findings, and they were happy to share and helped other classmates understand the problems. I would definitely implement that setup again. I observed that most students enjoyed doing group work and talked out their thoughts.
What faculty observed about building trust and community:

● Andrea Modarres: Meg Henderson uses a method to call on students randomly that encourages participation by all students. I want to modify it for use in my classes without penalizing students who are extremely uncomfortable speaking.

● Emily Cilli-Turner: After observing Leanne Laux-Bachand's class, I did post more events that are happening at UW to my canvas page for Core. She really tried to get her students aware of campus events and resources.

● Jutta Heller: I observed a few effective techniques: One example was how LeAnne Laux-Bachand would ask one of the students to read the text on a slide. I realized that this would serve several purposes: 1) Slow down the pace of the class (good!) and 2) allow students to use their voice in class even if they were too shy to answer a direct question. This way they could still participate. Having students read off the slides was effective. I heard from students who were otherwise unwilling to speak up. As a consequence, they were than more confident to actually speak up when they were asked a direct question. It is a great way to break a "shyness" barrier.

● Jacob Martens: I observed Shubha Rajopadhye’s students in her class taking a quiz. Students were quiet and respectful of others in the class, and they sat patiently waiting for others to finish without making distractions or getting on a phone to pass the time. It occurred to me that she could have collected their quizzes as soon as they finished, but she waited. During this time, Shubha maintained a quiet presence, answering students questions individually at a whisper, and giving clear time cues about five minutes before time was up. I was reminded that it is good to trust quiet, productive silence as much as lively, small group conversations, and to give ample time for students to reflect on and take responsibility for their work and choices on how to use their test time.

● Heather Heinz: Every time I do Teaching Squares I'm reminded of how willing our students are to engage with each other and to help bring each other up to speed during pair and group work.

● Jacob Martens: Rose Njoroge does frequent low-stakes quizzes and the students grade them in class in order to build trust, reinforce the material, address questions immediately, and increase testing confidence.
What faculty observed about teaching information literacy and citing sources:

- Cynthia Howson: Andrea Modarres demonstrated scaffolding the reading of scholarly articles. She elicited meaningful discussion of characters and craft. Students are responsible for discussion questions. She created a good culture around time for each student’s thoughts.

- Jutta Heller: I appreciated the citation exercise that I observed in Danica Miller’s class. She gave students a variety of sources for which they had to create the correct citation and a Works Cited page. She also got groups up to the board, which is something I have been trying to do more and more.

How Teaching Squares improved our teaching:

- Jutta Heller: I will work on creating clear library research assignments that have detailed instructions. I also started implementing LeAnne Laux-Bachand’s practice of having students read out loud from slides as a low-stakes method of getting them to speak up in class. That has worked really well. I get students who are normally quiet to volunteer.

- Jacob Martens: Thanks to Teaching Squares, I learn from colleagues I didn’t have the opportunity to observe. Teaching Squares helps me calibrate my teaching and think about how to best prepare my first-year students to succeed. It is also helpful tool to focus on all the good work we all strive to do together.

- Jeremy Davis: I implemented random call for low stakes questions like reading slides and interpreting graphs, to help students grow accustomed to talking in class.

- Rita Than: I learned that after asking a question, I should wait a little longer for students to respond.

What might faculty observe in future Teaching Squares and share as kudos:

Effective use of:

- Technology or other supplies and materials
- Universal Design in Learning
- Metacognition
- Active learning
- Affect domain (intentionally engaging examples that seek emotional responses)
● Engagement
● Group work
● Soft skills- transferable skills
● Out of class study skills- institutional literacy (When/how to get students to office hours, the TLC, or other services)
● Lab-lecture connections or connections to the previous/next course
● Using feedback from students
● Student presentations as a reflection of the spaces created for these presentations
● Building trust and community
● Assessment
● Incentivizing (not only through points)
● Incentivizing collaborative, efficient active learning (group quizzes, math proofs, games, etc.)
● Online access to materials or flipped courses
● Syllabus design
● Online course design
● Teaching Squares itself

What next?
Teaching Squares will continue for the 2018-2019 academic year, and we are welcoming faculty from all academic units to participate. If you are interested, and even if you participated this year, please consider joining us. You may think your class or topic won’t make sense to observers, that you speak a different language in your class (and that may be true), but we speak a common language as educators, and what can benefit most is being in a cross-disciplinary setting where observers can focus on style rather than content. Look for an email invitation or sign up here for Fall 2018 UWT Teaching Squares.

If you would like to read more before deciding, Teaching Squares Bring Cross-Disciplinary Perspectives is a good place to begin. If you have any questions, feel free to contact Jacob Martens or Jutta Heller.

We'll send another invitation at the beginning of fall where you can apply or re-apply by the end of the first week of classes. We’ll arrange for an early quarter meeting to provide you with your group assignment and a Teaching Squares handbook to help you get started, stay on schedule, and strive for a 4-3-2-1-0 Teaching Squares experience with lots of kudos to share with all.