

How Course Coordinator Values and Practices Align With the Needs of Instructors

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Course coordination in high enrollment undergraduate mathematics classes in the United States is a common practice that seeks to provide consistency in learning opportunities for students while balancing instructional support and pedagogical autonomy. In this study we investigate how the needs of instructors who teach in a coordinated course align with the values and practices of course coordinators. Analysis of 44 survey responses from both coordinators and instructors who teach in a coordinated course identified several coordinator actions and corresponding orientations that align with instructor needs as well as actions that instructors find valuable but that are not frequently occurring. These findings are significant because they can lead to better articulation of the knowledge, skills, and dispositions needed to be an effective course coordinator, which could then lead to the design of professional development aimed at helping coordinators be better able to meet the needs of their co-instructors.

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It is common in the United States for high enrollment undergraduate mathematics courses required of most STEM majors to consist of multiple sections taught by several different instructors and for those sections to be coordinated. Coordination typically consists of uniform course elements (e.g., common text, exams) and regular instructor interactions around issues of instruction to support each other in delivering high quality courses. A key characteristic of effective course coordination is the delicate balance between enacting policies and practices that provide consistency across sections while at the same time maintaining instructor pedagogical autonomy (Rasmussen et al., 2015; Rasmussen et al., 2021). This can be challenging given the increasingly wide variation in who teaches calculus and their sometimes-contingent status.

While previous studies have documented the different elements of course coordination and the different roles that course coordinators play (e.g., Adeyemi et al., 2023; Rasmussen et al., 2015), what is currently missing from the literature is a close investigation of how the values and practices of course coordinators align with (or do not align with) the needs of instructors who teach in a coordinated course, particularly given the change in who is teaching these courses and the variation in their background and experiences. The goal of this study is to begin to fill this gap, and we address the following two research questions:

- What are the needs and experiences of coordinated faculty?
- To what extent do the values and practices of coordinators, coordinated contingent faculty, and coordinated permanent faculty align with one another?

Insight into the needs of the varied instructors who teach calculus and the extent to which the values and practices of coordinators meet these needs is significant because it can lead to better articulation of the knowledge, skills, and dispositions needed to be an effective course coordinator, which could then lead to the design of professional development aimed at helping coordinators be better able to meet the needs of their co-instructors.

Theoretical Background

Central to our research goal is the need for insight into the practices and values of course coordinators. An overarching construct that encompasses both what coordinators do (i.e., their practice) and what they value is that of *orientation*. A person's orientation to a particular task or job not only provides a sense of direction for what one does but also reflects what that person deems important (Schoenfeld, 2010). As such, the orientation that a coordinator takes to their role shapes what their goals are and how they interact with their colleagues. In the context of classroom teaching, an orientation is a disposition or tendency one takes toward some aspect of their job as a teacher (Thompson et al., 1994; Philipp, 2007).

The work of Martinez et al. (2022) provides a comprehensive analysis of course coordinator orientations that we heavily draw upon in this study. Their analysis revealed two overarching course coordinator orientations. They refer to these two orientations as a Resource-Managerial orientation and a Humanistic-Growth orientation. A Resource-Managerial orientation refers to values and practices that leverage the knowledge, experience, and logistical management skills of the coordinator to facilitate consistency across multiple sections and different instructors. They identified the following five themes that characterize a Resource-Managerial orientation: a) draws on knowledge of the course, department, and institution, b) demonstrates experience teaching and knowledge of teaching the course, c) provides material related to content and curriculum, d) communicates clearly, and e) exhibits strong administrative skills. In contrast to a Resource-Managerial orientation, a Humanistic-Growth orientation refers to values and practices that facilitate the personal and professional growth of the instructors teaching in the coordinated course. A Humanistic-Growth orientation is manifested in the following five themes: a) attends to student experience, b) concerned about others, c) takes action to build community, d) attentive to instructor differences, and e) provides instructor support.

Part of the significance of this work is that the two orientations offer different but complementary approaches to professional development. More specifically, Martinez et al. (2022) argue that a Humanistic-Growth orientation outlines how course coordinators can provide professional learning for instructors in a way that is flexible, attentive to individual differences, and builds community. On the other hand, a Resource-Managerial orientation is a leadership approach that can promote instructional innovation by offering instructional materials, insights and knowledge about student difficulties, and relevant department and institutional policies. As such, the job of a coordinator is (or can be) complex and multi-faceted.

In this study we further this line of inquiry into course coordinator orientations by investigating the extent to which course coordinator orientations align with the needs and experiences of the coordinated faculty at one institution. This particular institution is an ideal case for such analysis as it has a long history of coordination and a growing number of teaching-focused faculty that serve as course coordinators.

Methods

Top Applied University (TAU) is a public engineering school with just under 6,000 undergraduate students, all of whom complete Calculus I, II, and III and at least one additional math course. Coordinated courses within the department are typically structured in sections of about 40 students, which are taught by a mix of adjunct faculty, Postdoctoral Teaching Fellows, and Graduate Teaching Fellows and are coordinated by a Teaching Faculty member. At TAU, Teaching Faculty are largely comparable to Tenured/Tenure-Track Faculty (T/TT) in how they are viewed and in how they can participate on campus but are generally only evaluated on teaching and service. Teaching Faculty are eligible for promotion but not tenure at TAU.

Currently, the department is almost evenly split between Teaching Faculty and Tenured/Tenure-Track Faculty. For this study's purposes and given the context at TAU, we define adjunct faculty, Postdoctoral Teaching Fellows, and Graduate Teaching Fellows as contingent faculty. We define Teaching Faculty and Tenured/Tenure-Track Faculty as permanent faculty given their nearly identical status to that of Tenured/Tenure-Track Faculty.

We developed a survey with two versions, one for coordinators and one for coordinated faculty, both of which focused on actions that coordinators take in their roles that could contribute to an effective and supportive environment for coordinated instructors. Of the 12 total invited coordinators, 11 responded (91.7% response rate), and of the 47 invited coordinated instructors, 32 responded (68.1% response rate). Among the coordinated faculty, 19 (59.3%) were contingent instructors and 13 (40.6%) were permanent faculty. We based the actions on previous research (Martinez et al., 2022; Rasmussen et al., 2015), and feedback from department faculty. The finalized 14 coordinator actions for these surveys is listed in Table 1:

Table 1. Coordinator actions organized by HG (Humanistic-Growth) and RM (Resource-Managerial)

HG1	The coordinator attended to student experience.	RM1	The coordinator provided clear, consistent information about what content was covered.
HG2	The coordinator provided opportunities for professional development.	RM2	The coordinator provided common written homework.
HG3	The coordinator made me feel welcome in the department.	RM3	The coordinator maintained common online homework.
HG4	The coordinator valued my input and feedback in the course.	RM4	The coordinator provided course content materials.
HG5	The coordinator allowed for some degree of instructional autonomy.	RM5	The coordinator exhibited strong administrative skills.
HG6	The coordinator provided regular meetings throughout the semester to ask questions about teaching the course and students.	RM6	The coordinator maintained a common Canvas course or Canvas Blueprint for the course.
HG7	The coordinator demonstrated knowledge of pedagogical and evidence-based practices.	RM7	The coordinator provided guidance on how to evaluate exams.

For each action, we asked participants to identify how frequently they implemented those actions (coordinators) or how often those actions occurred in their coordination experiences (coordinated instructors) and how important these actions were for the role (coordinators) and to have a positive experience in a coordinated setting (coordinated instructors). Both sets of questions were asked on a three-point scale.

We also asked both groups two open-ended questions: what worked well about their experience in coordinated courses and what challenges they encountered in coordinated courses. The first two authors used thematic analysis (Braun & Clarke, 2006): they read through and considered patterns in the responses, taking an inductive approach to identifying themes. They each reviewed the entire set of responses, coding responses with one or more themes. Finally, they met to discuss the coding and reconcile any differences until complete agreement was reached.

Results

We averaged the ratings on the three-point survey questions to create heat map visualizations to compare perceptions of frequency/importance of each action among the groups of participants: coordinators, coordinated permanent faculty, and coordinated contingent faculty (see Figure 1).

Humanistic-Growth IMPORTANCE Ranges: ≤2.0, 2.01-2.5, 2.51-3.0				Humanistic-Growth FREQUENCY			
	Coordinator	Contingent	Permanent		Coordinator	Contingent	Permanent
1. Attends to student experience	2.64	2.53	2.69		3.00	2.74	2.46
2. Provides PD opportunities	1.45	2.16	1.62		1.82	2.00	1.62
3. Makes me feel welcome	2.45	2.68	2.31		2.82	2.95	2.92
4. Values my input	2.55	2.74	2.38		2.91	2.79	2.85
5. Allows for instructional autonomy	2.00	2.58	2.23		2.45	2.89	2.69
6. Provides regular meetings	2.27	2.11	1.85		2.55	2.47	2.23
7. Demonstrates pedagogical knowledge	2.00	2.42	1.62		2.27	2.68	2.38

Resource-Managerial IMPORTANCE				Resource-Managerial FREQUENCY			
	Coordinator	Contingent	Permanent		Coordinator	Contingent	Permanent
1. Provides consistent info about content	2.91	2.95	2.92		3.00	2.89	2.85
2. Provides common written HW	2.82	2.74	2.85		3.00	2.89	3.00
3. Maintains common online HW	2.64	2.63	2.58		2.73	2.84	2.54
4. Provides course materials	3.00	2.68	2.69		3.00	2.84	2.92
5. Exhibits strong administrative skills	3.00	2.95	3.00		3.00	2.95	2.69
6. Maintains a common Canvas course	2.82	2.74	2.77		2.82	2.79	2.85
7. Provides guidance on evaluating exams	2.55	2.63	1.75		2.91	2.84	2.50

Figure 1. Average perceived importance and frequency of different coordinators actions by faculty group. Scores of 1 = Not important/In few coordination experiences, 2 = Somewhat important/About half of coordination experiences, 3 = Very important/In most or all coordination experiences

We first consider research question 1: What are the experiences and the needs of coordinated faculty? We use the ratings about the frequency of coordinator actions to explore coordinated instructors' experiences and the ratings about importance of these actions to examine coordinated instructors' needs. We also use coded responses to the open-ended questions.

What are the Experiences of Coordinated Faculty?

Finding 1a: Coordinated faculty agree that most coordination actions are occurring frequently and more consistently agree about the frequency of Resource-Managerial actions as opposed to Humanistic-Growth actions. In looking at the two frequency heat maps on the right of Figure 1, 71% (10 of 14) actions have averages of at least 2.50 for both coordinated contingent and coordinated permanent faculty, suggesting general agreement that many actions are occurring most or all of the time. The four actions that coordinated faculty feel are happening less often are all in the Humanistic-Growth category: 'attends to student experience' (HG1), 'provides PD opportunities' (HG2), 'provides regular meetings' (HG6), and 'demonstrates pedagogical knowledge' (HG7). We observe that there is much more variability in the HG frequency table compared to the RM frequency table. Additionally, faculty commented more frequently about Resource-Managerial actions compared to Humanistic-Growth actions when asked about what is working well for coordination.

What are the Needs of Coordinated Faculty?

Finding 1b: Coordinated faculty believe that nearly all Resource-Managerial actions are important and report them as more important than Humanistic-Growth actions, although most Humanistic-Growth actions are rated as at least somewhat important. The importance heat map averages for RM statements for coordinated faculty are all 2.58 or above (see bottom left heat map) apart from ‘provides guidance on exams’ (RM 7) for permanent faculty (average 1.75). By comparison, if we look at the heat map averages for HG statements for coordinated faculty (see upper left heat map in Figure 1), only one Humanistic-Growth action, ‘attends to student experience’ (HG1), was rated as important by both coordinated contingent and coordinated permanent faculty with an average of 2.53 and 2.69 respectively. Additionally, about half or more of all coordinated faculty in each group rated each of the RM and HG coordination actions as at least somewhat important. This suggests that even though there may be differences in importance ratings between RM and HG actions, all coordination actions have some value to many faculty.

Finding 1c: Coordinated contingent faculty have different needs from the coordinated permanent faculty, primarily with respect to Humanistic-Growth actions. Most differences in needs between coordinated contingent and coordinated permanent faculty were with the HG actions, with coordinated contingent faculty rating all HG actions, except ‘attends to student experience’ (HG1), as more important than the coordinated permanent faculty did (see upper left heat map in Figure 1). It could be that these actions provide a greater benefit to contingent than permanent faculty due to the nature of their employment. All these actions focus on helping instructors feel included and supported in growth, something that permanent faculty may already get elsewhere, but what contingent faculty are primarily obtaining through their coordinated experience.

Another difference between coordinated contingent and permanent faculty had to do with the need for consistency across sections. In responses to the open-ended question about challenges with coordination, 64% (9 of 14) of coordinated contingent faculty expressed concerns about providing a consistent experience for students compared to only 22% (2 of 9) of coordinated permanent faculty. We believe there is a good reason more contingent faculty brought up the consistency issue. Namely, for coordinated contingent faculty members, teaching is the entirety of their job, so consistency issues over which they have little to no control can cause anxiety over whether they are adequately performing the position requirements.

We next consider research question 2: To what extent do the values and experiences of coordinated faculty align with what coordinators value and practice? To answer this question, we focus our attention on all three columns of the heat maps shown in Figure 1 and the responses to the open-ended questions for both coordinated faculty and coordinators.

Alignment between coordinators and coordinated faculty.

Finding 2a: The needs of coordinated permanent faculty generally align with the values of coordinators, with a few exceptions. By examining columns one and three on the left two heat maps, we can see that for most coordination actions, the importance averages are similar for coordinators and coordinated permanent faculty. This is perhaps unsurprising, because the coordinators are all permanent faculty, although neither group was a subset of the other when considering survey respondents. In Finding 1c, we addressed the ways in which coordinated contingent faculty importance ratings aligned with those of coordinated permanent faculty in RM categories as well as the ways they did not align in HG categories. The alignment of coordinators with coordinated permanent faculty means that there is also alignment between coordinators and

coordinated contingent faculty in importance for RM actions and more misalignment between coordinators and coordinated contingent faculty in importance for HG actions. We believe that those actions for which coordinators and coordinated permanent faculty did not align in terms of importance reflect a lack of clarity around expectations for the coordinator role.

Alignment between needs and experiences.

Finding 2b: Most of the needs of the coordinated faculty (related to the RM and HG actions) are being met by the coordinator practices. We can compare the importance ratings of the coordinated faculty to the experience ratings of the three groups (which are generally aligned) as a measure of how these needs are being met. For RM actions, the needs of coordinated faculty are mostly being met in their coordination experiences. It is interesting to note that for (RM5) ‘exhibits strong administrative skills’ the coordinated permanent faculty unanimously report it as ‘very important’ with a 3.0 importance rating, yet only 69% (9 of 13) report the action as always happening in their coordination experiences.

In looking at the ratings of importance and experience for HG actions, there are only two actions for which the frequency rating was lower than the importance rating. We highlight ‘provides PD opportunities’ (HG2) for coordinated contingent faculty (2.16 importance, 2.0 experience). While this is not a large difference, we have previously discussed the importance of this action to some contingent faculty. The following was expressed by one of the coordinators in the open-ended questions and relates to the lack of clarity around professional development: “It is also challenging to gauge how involved I need to be with each individual coordinated instructor and what my role is helping/mentoring/evaluating them. It would be nice to have some more clarity about what, exactly, my role is for them as professionals.”

Discussion

We first consider the question, “How are the needs of coordinated faculty being met?” The results show that RM actions were valued more than HG actions in general by coordinated faculty (Finding 1b) and there are different needs for the coordinated contingent faculty and coordinated permanent faculty (Finding 1c). About half or more of all coordinated faculty in each group rated each of the RM and HG coordination actions as at least somewhat important (Finding 1b). Additionally, given the concern that coordinated contingent faculty had around consistency, it seems that coordinated faculty in general need a coordinator who performs all coordination actions while also addressing consistency concerns across sections. We also observed that some needs were clearly not being met (Finding 2b), which suggests a need to revisit the coordinator's duties and expectations list adopted by the department. Furthermore, our data supports Martinez et al.’s (2022) thesis that RM actions serve as a baseline for coordinator expectations and that HG actions are advanced practices.

We next consider the question, “How should the coordinator role be defined so it meets the needs of coordinated faculty while also supporting coordinators?” Our findings indicate that in addition to ensuring that coordinators perform RM actions, it is also valuable to support coordinators in performing HG actions. Given that almost all of the coordinated courses at TAU utilize a mix of contingent and permanent faculty, each coordinator action is valuable to at least some cohort of coordinated faculty. The three HG actions that were not rated as ‘very important’ were still rated as ‘somewhat important’ by contingent faculty (Finding 1b) while coordinators viewed these actions as either unimportant (HG2, HG7) or only somewhat important (HG6). The data suggests that coordinated contingent faculty view coordinators as mentors, whereas coordinator actions are not always fulfilling that role.

We hypothesize that the variations in which actions a coordinator chooses to perform may occur because the coordinator is unsure of the required list of duties, does not have time to attend to some actions, or is not sure how to perform some of the actions. Additionally, some coordinators may not believe HG actions should be part of the job. While we do not know the exact reasons, we conjecture that all the above are factors to at least some coordinators. To help coordinators appreciate the value of HG actions, we believe that greater uptake would occur if we were able to demonstrate improved student learning and increased sense of belonging of contingent faculty when coordinators embrace an HG orientation and attend to HG actions.

Conclusion

TAU is not unique in employing both contingent faculty and permanent faculty to teach in coordinated courses, although the ratios and types of contingent faculty may vary at other institutions. Findings suggest two needs for coordination more broadly. First and foremost, there is a need for our professional societies to provide guidance on what the role of a course coordinator should be and to provide recognition for this challenging and important role. Identifying evidence-based coordination best practices would support departments and institutions in defining the coordinator role more locally. Coordinators have both direct and indirect impact on all the students enrolled in coordinated courses and therefore have the potential to make a significant impact on student learning (Bressoud et al., 2015; Rasmussen et al., 2019).

In addition to identifying the coordinator role and best practices, there is also a national need to provide professional development for coordinators to develop both the dispositions and skills necessary to be effective in their roles. The different needs of coordinated faculty pose a particular challenge for coordinators. While many coordinators may feel more comfortable performing RM actions, the differing values for and uncertainty around HG actions imply that coordinators may need more support in performing these actions. Our professional societies could also lead this charge by providing workshops, materials, or even certification for coordinators. Given the impact a coordinator has on instruction and student learning, it is imperative for departments and professional societies to provide guidance on the role, identify best practices, develop professional development programs, and to provide recognition for coordinators.

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