

Academic Senate of the California State University
Quantitative Reasoning Task Force

The Quantitative Reasoning Task Force's [QRTF] September 2016 Report was approved in toto by the Academic Senate of the CSU, was strongly supported by our colleagues in the California Community Colleges and was accepted enthusiastically by a variety of stakeholders in California and nationally. Over the last few months however, specifically since the issuance of EO 1100 [revised] and EO 1110, the Report has been repeatedly mentioned as the source of and legitimation for a number of mandated changes to General Education in the CSU and to developmental instruction in quantitative reasoning. As co-chairs of the QRTF and drafting members of its written Report, we seek to provide some context for the recommendations in the Report and to correct some disturbing misapplications of those recommendations. In some cases, these misapplications attempt to *separate* the problem statement of the Report from the solutions *recommended*, and in others they *isolate* one recommendation from another. However, the recommendations of the QRTF are interdependent and as a group they are entwined with the problem they attempt to solve. Separating and isolating elements of the Report, as the recent executive orders and their justifications do, creates a quantitative reasoning regime that is weakly defined within a complex, intersegmental environment that cries for guiding principles. Over time, we risk limiting access within the CSU by tracking students away from many majors and creating transfer confusion between ourselves and our sister segments. By being careful now, we we would protect the value of the CSU degree and the opportunities it affords its graduates. By balancing access and opportunity, we achieve educational equity.

To give the Report its context and to point out the risk, we provide here a brief summary of its findings. and then reflect on how they relate to EO1100 (revised) and 1110.

QRTF Report Recommendations:

The QRTF was called into existence to address inequities surrounding the existing CSU practice of requiring Intermediate Algebra as a prerequisite for any general education (transferable) quantitative reasoning/math course. These inequities were particularly pronounced for students who transferred into the CSU from the California Community Colleges where students were languishing in long sequences of remedial math classes. The issue was a topic of active and heated discussion in the CSU and in the press starting around 2009 when The Carnegie Foundation's solution to the problem, Statway, first started taking hold in California. It was the subject of a 2015 report to GEAC by the CSU Math Council, it was addressed in Berkeley's 2015 Conference on Developmental Math, and it was summarized in Pamela Burdman's 2015 series of reports "Degrees of Freedom". Therefore, any claim that the CSU was unaware of this issue until after the QRTF Report is ill-informed.

The QRTF's identification of the inequities caused by the universal Intermediate Algebra threshold informed the Task Force's first recommendation – A definition of Quantitative Reasoning (QR) that was based on students' quantitative needs in their majors, careers and interests. Creating such a definition is a necessary prerequisite to any intelligent conversation about QR, most especially conversations across organizational boundaries (e.g., talking with our K-12 colleagues about QR instruction, talking with our CCC colleagues about appropriate courses, or talking with employers about desired skillsets).

The second recommendation is at the heart of the debate about access and equity in the CSU, and proposes revision of QR requirements in the CSU. The QRTF took the position that QR is more than just a single required course. The Task Force recommended ending the use of prerequisite coursework as a metric for determining QR

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competency. Rather, the Task Force chose to define separate requirements for foundational (aka entry level) QR and baccalaureate level (aka exit level) QR. The Task Force concluded that those definitions should be framed in the language of the California Common Core State Standards in pursuit of ensuring that requirements are communicated effectively to our colleagues in K-12 and higher education as well as the public. Put succinctly, the new foundational threshold would ask students to master the K-9 math skills, by practicing them in the full K-12 standards, and to demonstrate proficiency with Common Core's nine basic mathematical practices. Upon exit, the baccalaureate threshold would ask students to build upon foundational skills to be lifelong learners who are proficient in the QR skills and practices needed in their majors, interests, and careers. This new perspective on GE QR asks for more than one course taken at the start of their studies, and it challenges the CSU to see QR as an integrated part of the GE curriculum taught across disciplines and over the course of a 4 year degree. In that case QR is one building block of GE and thus necessitates that foundational QR be more than just a narrow preparation for one B4 course.

The third recommendation addresses the issues of access and opportunity in the CSU. An important part of this recommendation is that CSU review and revise policies to ensure that those policies provide transfer and developmental math students with increased access to QR courses that can open opportunities in students' majors, interests, careers and civic lives. In pursuit of maximizing students' abilities to engage in and make use of QR, the Task Force recommended that CSU require four years of QR coursework in high school. Another part of this recommendation is that students engage in QR coursework in a timely fashion rather than leaving it to the last semester and delaying graduation. Finally, in this section the Task Force recommends that CSU remove the universal Intermediate Algebra prerequisite.

The fourth and final recommendation was that the CSU should create a campus-based Center for the Advancement of Instruction in Quantitative Reasoning to support high quality instruction in high schools, community colleges, and public universities. The Task Force explicitly noted that this Center needs to be a locus of intersegmental conversation among faculty, holding true to the principle that those actually doing the instruction must be involved in the conversations, which is much more effective and results in better outcomes than providing yet another venue for administrators to pontificate on what techniques teachers should be using. This principle led to the Task Force's assumption that faculty would be integrally involved in the leadership of the Center, but such is not currently the case.

The interface of the QRTF Report on EOs 1100 (revised) and 1110.

Again, we want to emphasize that the QRTF recommendations address complex and interrelated aspects of QR education that impact every student in the CSU and may well have an impact on every student in California. The CSU Chancellor's Office attempt to implement only selected aspects of the recommendations will not provide the access or equity we seek.

For example, eliminating the use of prerequisite coursework as a mechanism for ensuring appropriate QR preparation was indeed one of the QRTF recommendations. However, doing so without defining what QR competencies CSU does require (at both the foundational and baccalaureate levels) leaves CSU faculty, our colleagues in the other segments, and our students without guidance as to what is intended. For instance, there is no explicit definition or guiding principles for what B4 should or should not require for entry into or successful completion of a B4 course. The argument that other areas of B4 do not have such guiding principles is no excuse.

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QR is peculiar in two respects: first, that the content taught in high school and college overlaps in important ways, and second that overlap (and the boundaries between) has for decades been a source of controversy. These circumstances create a disconnect which for students becomes a trap.

An example of the misapplications and attempts to separate the *problem statement* of the Report from the *solutions recommended*, can be found in EVC Blanchard's missive to ASCSU Chair Miller dated October 9, 2017. Blanchard notes that EO 1100 [revised] responds to inequities caused by the required Intermediate Algebra prerequisite for GE Subarea B4. Quoting the QRTF report, he notes that the prerequisite is not applied uniformly in practice [something the CSU CO was aware of well before the QRTF Report]. However, Blanchard casts the QRTF report recommendations that propose a thoughtful solution for that problem as beyond the scope of general education. In the case of Foundational QR, he calls it an admissions requirement, whereas the QRTF report defines it as a college readiness requirement, something that currently the CO is trying to measure using multiple methods without defining. He calls Baccalaureate QR a graduation requirement, whereas it is clearly described in the QRTF Report as part of lower division and upper division general education.

Further, Blanchard's 9 October letter demonstrates a misreading of the QRTF recommendations concerning foundational and baccalaureate QR proficiencies. He suggests that faculty governance precludes defining foundational and baccalaureate definitions or guiding principles. We agree that the campuses should have autonomy in creating standards that realize QR on their campuses, but that is not inconsistent with guiding principles vetted by the faculty as are the QRTF recommendations. In the absence of such principles consistency in GE [one of EO 1100 [revised]'s stated goals] will be very difficult. It is easy to see transfer problems arising when one campus takes a much more liberal view on QR than another.

A final troubling example from Blanchard's memo is his explanation that EO 167 prevents CSU from imposing Foundational QR on the CCCs. The CO has changed [revised] EO 1100; hence, it seems we could also work to change EO 167. It may well require consultation with the CCCs, but that is desirable, and in fact the QRTF proved that such consultation is possible at the faculty level.

Beyond the Blanchard memo there are other examples of the CO separating and isolating the QRTF findings. In particular, the CSU CO has established, in direct conflict with QRTF recommendations, a CO-located, administration-heavy Center for Improvement of Instruction in QR, which lives under the K-12 outreach arm of the CO's office. It appears the only portion of the QRTF recommendation that the CO followed was in naming the Center. Sadly, absent definition of QR requirements, absent that conversation among practitioners proposed by the QRTF, absent a strong connection between the Center and campuses, the Center as established by the CO will not be an effective means of engaging in the conversations with K-12 and CCC faculty that would enable a successful change in our approach to QR.

Speaking on behalf of the QRTF, we ask that CSU administration cease misrepresenting the intent and the content of the QRTF Report and its recommendations. In particular, we ask that the CO stop implying that they are implementing what the QRTF envisioned. The "we'll pick which recommendations to consider implementing" approach ignores the reality that the complexity of the challenges presented by implementing a quantitative reasoning regime in the CSU necessitate solutions that are themselves complex and interconnected. Selectively implementing some of the recommendations while ignoring others follows a path leading from viable solutions and toward further, and possibly more intractable, problems.

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Access and equity are laudable goals, goals shared by the QRTF. However, the partial implementation of recommendations advanced by the CO does not acknowledge that the access provided under the CO proposals is illusory and risks preventing students from acquiring the skills and competencies needed for a variety of the professions and careers that act as entry points to the middle class.

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