Beyond Competency: The Imperative to Foster Professionalism in Computing Graduates

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Abstract

ACM, IEEE, and nineteen other international computing education societies have endorsed the Computing Curriculum 2020 project report, *CC2020, Paradigms of Global Computing Education*. CC2020 prescribes a competency model for describing curricula that boldly challenges baccalaureate curriculum design to integrate "knowing why" into a fifty-year tradition of guidelines focused on "knowing what." Prescribing this competency model is no less than a call to action to acknowledge the breadth of society's aspirations invested in, or dependent upon, computing education: curriculum/program designers; academic and governmental institutions; teachers and students; accreditors, employers, and job applicants; licensure and professional societies. A thread that binds these aspirants is a realization that the character of a computing professional is as important as her computing expertise. Computing professionalism demands a well-formed mindset, of which computing competency is an incumbent ingredient. But, the whole of a recipe of professionalism enfolds more than the "what" and "how" of computing; it must nurture recognizing and reflecting upon computing's transformative impact on the systems of society, both technological and human. We examine CC2020's competency model that provides the seminal opportunity for integrating these technological, sociological, and ethical dimensions of computing and a framework through which academia and industry can partner in advancing computing as a profession. We present a rationale of professionalism in computing where competent practice is fully informed in the critical aspects of accountability: risk, responsibility, and consequence where developing a professional mindset of inclinations and dispositions of character is not ancillary, but essential to educating baccalaureate computing graduates.

Keywords: professionalism, competency, mindset, dispositions, accountability, computing education, curriculum design.

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