

ABSTRACT

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Degree Received: December 2018

Title: New Paradigm of Construction Engineering Education through the Pedagogical Approach

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The construction industry and the students alike have requested that the learner experience be enhanced to maximize the preparation of and development of the future construction professional. It has been identified that a focus on the development of the learner is necessary by revisiting curriculum and how the experiential learning experience can be correlated and interwoven within the technical/engineering curriculum. This research is structured to address this problem by establishing objectives for future work, establishing goals/outcomes of those objectives, and specific to this paper define 2 initial foundational elements for meeting the defined objectives. These 2 elements are explored in depth to establish the trajectory of the objectives for changing the landscape of construction engineering education. We are dealing with a new generation of thinkers and how they think does not mimic those of previous generations, yet the classroom approach has been slow to react and adapt to this new learner; therefore, we are exploring pedagogical methods to engage the student, connect curriculum objectives & content (theory) with experiential opportunities that join the two schools of thought to maximize the learning experience while leveraging contemporary knowledge which we hope will produce well prepared construction engineering students that the industry will be able to put to work immediately. The discipline of engineering education has provided a wealth of knowledge that should transform the typical construction engineering education from that of the rows of students being lectured to that of students in collaborative communities of practice utilize experts as mentors in solving complex problems. This dissertation primarily focused on the comprehensive review and knowledge attainment via literature of the discipline of engineering education. The body of knowledge is vast and yet very little if any has been applied to the construction engineering discipline. This research identified that little application of the theories and strategies to engineering let alone construction

engineering; therefore, this thesis explores two methods in bridging this gap such that the methods are a catalyst to curriculum revision and standardization across the construction engineering education network. Overall, the future work associated with the curriculum revision aimed at developing and preparing the future construction professional is limitless because the body of knowledge associated with engineering education has yet to be applied to the construction discipline.