Measuring Graduate Teaching Assistants' Climate Under a Pedagogical Change Initiative

Syeda Fatema Mazumder, Farah Tokmic, Tonya Frevert, Mary Lou Maher

University of North Carolina at Charlotte

Charlotte, North Carolina

smazumde@uncc.edu

ABSTRACT

An organization with high undergraduate enrollment, the *College of Computing and Informatics* at *UNC Charlotte* is undergoing a sustainable pedagogical shift. Our Graduate Teaching Assistants (GTAs) being a crucial part to sustain this change, are also facing a shift in their climate. We aim to present measurement to gauge our GTAs' climate under this pedagogical climate shift. For this purpose, we have analyzed 184 survey responses from GTAs and developed three constructs: *Self-Competence*, *GTA-to-Faculty Relations* and *Community Belonging*. Exploratory Factor Analysis was used to identify the underlying factors, exhibiting 13 items retaining to these three constructs with a Cronbach's alpha of 0.94. This measurement shows that with engaged classroom practices, we are also fostering an engaged climate for our GTAs.

CCS CONCEPTS

• **Social and professional topics → Computing profession**.

KEYWORDS

graduate teaching assistants; pedagogical change; flipped classroom

1 INTRODUCTION

Four years ago, our computing college adopted a systematic change to build a sustainable practice of educational innovation by raising awareness of teaching innovations, resources for pedagogical change and support for teaching practices that engage students [5]. To transform undergraduate students computing interest into an affinity identity [3], we adopted "flipped classroom" methods [2], project-based learning [1] and socially relevant computing [4]. Our aim of this research is to examine how this systematic change is affecting our Graduate Teaching Assistants (GTAs) by collecting 184 survey responses from the GTAs. Our analysis revealed three constructs representing their attitude under this systematic change: Self-Competence, GTA-to-Faculty Relations and Community Belonging.

2 OVERVIEW

The survey items were developed internally by an interdisciplinary group of computing education and organizational science scholars.

GTAs were asked to indicate their levels of agreement with survey items using a Likert-type 6-point rating scale (1 = Strongly Disagree, 6 = Strongly Agree). Exploratory factor analysis confirmed a model with a total of thirteen items: five items loading on the self-competence factor, three on the GTA-to-faculty relation factor, and five on the community belonging factor. The internal consistency for the overall scale was strong with a Cronbach's alpha of 0.94.

2.1 The Constructs

Self-Competence: The construct *Self-Competence* is geared towards how the GTAs perceive their capabilities to do their duties, how much worthy and confident they feel as a TA in the context of this college. Our GTAs responded to this construct with mean (M) of 5.16 (*SD* = 0.98).

GTA-to-Faculty Relation: This construct helps to assess how comfortable and noteworthy the GTAs feel while working with the faculty. Our results indicated a mean (M) of 5.27 (*SD* = 0.95).

Community Belonging: Due to the heavy use of the flipped classroom model, our GTAs get numerous opportunities to engage with undergraduate students and work closely with the faculty. This construct helps us to perceive their engagement and sense of belonging in this community. A mean (*M*) of 5.06 (*SD* = 0.89) was calculated for this construct.

Whilst this study did not confirm anonymity from the participants, the constructs and the scores indicate that our systematic change is bringing a positive effect on our GTAs. Qualitative

3 ACKNOWLEDGEMENT

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