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Collaborative Online Learning Experiences Among Health Educators

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INTRODUCTION

For almost a quarter-century, online distance learning has undergone dramatic growth at all levels of education. The 2020 COVID-19 pandemic necessitated the rapid replacement of standard instructional methodologies with an e-learning experience. In 2007, 21.4% or 3.9 million students participated in at least one online course; by 2018, that number rose to 35.3%, approximately 7 million. With the onset of COVID-19, 98% of institutions moved their in-person classes online (National Center for Education Statistics [NCES], 2018).

Educational researchers consider collaboration to occur when there has been mutual agreement within the classroom to engage students in a joined effort to master a concept or work towards solving a central problem (Vassigh et al., 2014). While many studies have investigated the student perceptions of collaborative learning, few have focused on teacher characteristics and sentiment. In 2018 Weinberger and Shonfeld examined student teachers' demographics, attitudes, knowledge, and abilities to implement collaboration in their classrooms. The *Collaborative Learning Experiences Questionnaire (CL)*, was specifically developed for this purpose based upon three previous questionnaires: *Collaborative Learning* (McNamara & Brown, 2008), *The Collaborative Learning, Social Presence, and Satisfaction* (Spears, 2012), and *Leading a System-wide Pedagogical Change* (Weinberger, 2018).

These principal authors acknowledged the limited generalizability of their study and advocated for additional research in other colleges and countries. The current research attempted to extend and further validate the collaborative learning model of Shonfeld and Weinberger (2018, 2019). The sample under investigation included health educators from the United States; who utilized a distance-learning format in their programs during the COVID pandemic.

METHODS

The *Collaborative Learning Experiences Questionnaire (CL)*, developed by Shonfeld and Weinberger (2018), was the sole vehicle for collecting data throughout this study. Forty-four university health education faculty self-selected to participate representing six institutions (Table 1). Psychometric analyses of the CL Questionnaire had been conducted by Weinberger and Shonfeld (2018) with student teachers and in a later study of employed teaching faculty (Shonfeld and Weinberger, 2019). The respective results revealed a Cronbach's alpha $\alpha = .74$ and $\alpha = .82$ for the advantages section of the questionnaire with an $\alpha = .69$ and $\alpha = .79$ for the disadvantages section. The attitude section reliability was found to be $\alpha = .79$ and $\alpha = .67$.

Table 1

Response Rate by Institution

Institution	Department	Instructors employed	Sample number	Response rate
BMCC	Health Education	27 (12 full time, 15 adjuncts)	13	48.1%
Adelphi University	Health and Physical Education	23 (17 full time, 6 adjuncts)	2	8.7%
York College	Health and Human Performance	25 (10 full time, 15 adjuncts)	1	4%
Queens College	Family, Nutrition and Exercise Science	18 full time	7	38.9%
Rowan University	Health and Physical Education	22 (10 full time, 12 adjuncts)	8	36.4%
University of the Cumberlands	Health, Exercise and Sports Science	48 (8 full time, 40 adjuncts)	13	27.1%
Total for institutions	All departments	163 (75 full time, 88 adjuncts)	44	27.0%

Teachers were relatively evenly split between instructor or adjunct staff (50%) and career line professors (45.5%) with two additional subjects listed themselves as lecturers.

Counterintuitively, the faculty's primary function was not significantly associated with the level of student taught, nor with years of teaching experience.

Expectedly, a significant relationship was identified between participant's age and years of teaching, $\chi^2(16, N = 44) = 52.71, p < .001$. The majority of faculty (68.2%) have been teaching between 4 and 20 years. No other significant relationships were uncovered between the respondent's age and the type of students taught or the educator's primary function. Also, the level of student taught was not found to be significantly related to the respondent's years of teaching.

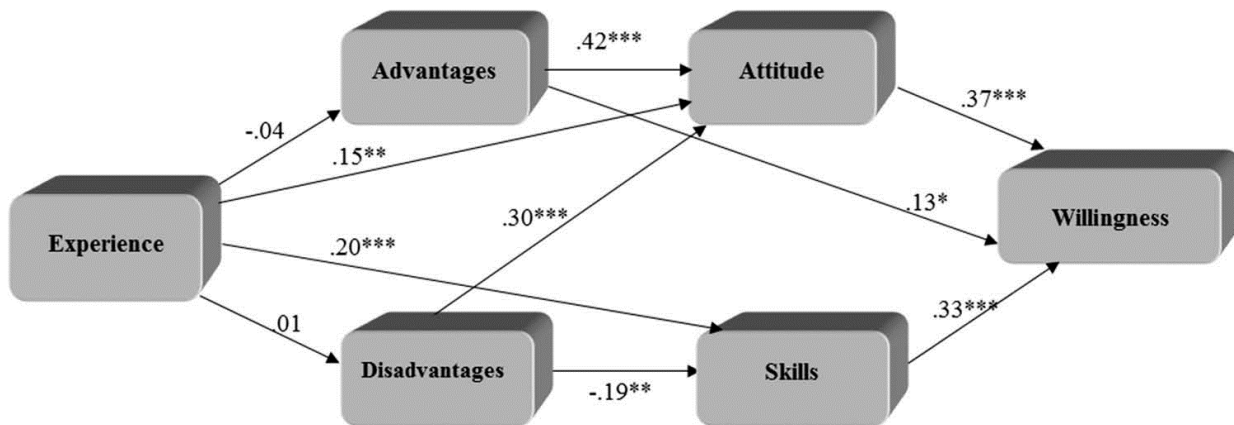
RESULTS

Winberger and Shonefeld (2018) constructed a detailed model based upon their CL questionnaire constructs (Figure 1). The research question investigated sought to validate these causal paths with a new sample of health educators in the United States utilizing an online paradigm. Consistent with the earlier study, this sample uncovered no direct bivariate correlation between the measures of experience and willingness $r(42) = .01, p = .951$. Additional, analysis employed a univariate regression with the measure of experience, designed as the initial predictor variable, followed by the mediators serving as covariates: benefits, disadvantages, attitude, and skills. Willingness to integrate was assigned as the dependent variable. The overall corrected model was found to be significant $F(11, 43) = 5.89, p < .001$. However, the only effect noted was for attitude demonstrating a statistical relationship $F(1, 43) = 40.27, p < .001$. A strong partial Eta Squared for this single variable accounted for almost 56% of the total explained variance in the measure of willingness.

A confirmatory SEM analysis was conducted for the present sample and assessed employing the identical framework of Weinberger and Shonfelds (2018) model. According to these authors their sample yielded a high level of overall model compatibility (NFI = .99, CFI = .99, RMSEA = .05, $\chi^2 = 3.7, p > .05$). By comparison, the present sample resulted in a less than adequate model configuration (NFI = .79, CFI = .56, RMSEA = .42, $\chi^2 = 83.89, p < .001$), which cannot be considered an accurate portrayal of the relationships among these constructs.

Figure 1

SEM of Willingness to Integrate Collaborative Learning in Teaching



DISCUSSION

Table 2 presents a direct comparison of the two samples provided for each path: the standardized regression weights, the strength of the effect, and associated significance level. Weinberger and Shonfeld's (2018) model presented ten distinct paths. Two showed no significance and do not formally operate as mediating variables from experience; the linkages between experience and advantages and with disadvantages. Further, standardized regression weights of .20 or less are generally considered weak and not of important predictive value. Four paths in the Weinberger and Shonfeld model, although attaining significance due to sample size, should be regarded as marginal or unsubstantiated; these are experience and attitude; experience with skills; advantages to willingness and between disadvantages and skills. The four remaining significant regressions were, at least, mildly predictive and gave support to the model; advantages with attitude, disadvantages, and attitude, attitude to willingness, and for skills and willingness. The current evaluation, by comparison, revealed five weak regressions that were not attaining statistical significance for this sample size. Only a single significant path $b = .77$ indicated a strong correspondence between respondent attitude and willingness to incorporate online collaborative learning.

Table 2*Comparison of Model Data*

Model Path	Weinberger and Shonfeld 2018 Sample			Present Sample		
	Standardized Regression	Relative strength	Significance Level	Standardized Regression	Relative strength	Significan ce Level
Experience to Advantages	-.04	None	Not Significant	-.13	Weak	.39
Experience to Disadvantages	.01	None	Not Significant	.00	None	.98
Experience to Attitude	.15	Weak	< .05	-.01	None	.96
Experience to Skills	.20	Weak	< .01	.00	None	.99
Advantages to Attitude	.42	Mild	< .01	.14	Weak	.35
Advantages to Willingness	.13	Weak	< .10	.04	None	.72
Disadvantages to Attitude	.30	Mild	< .01	-.12	Weak	.42
Disadvantages to Skills	-.19	Weak	< .05	-.13	Weak	.41
Attitude to Willingness	.37	Mild	< .01	.77	Strong	< .01
Skills to Willingness	.33	Mild	< .01	.11	Weak	.27

These findings were generally consistent with the analyses described earlier. The relationship measured by the standardized regression estimates between benefits and attitude was more diluted than the direct correlations and did not attain significance in the SEM. No direct causal path between skills and willingness was found substantiated by any of the analyses conducted. Additional alternative paths among these variables did not appear supported in the present study.

Online collaboration will continue serve as an important vehicle for providing faculty and students with a shared educational experience. Training and focused methods of enhancing instructor attitude will influence their willingness and the quality of collaborative strategies initiated.

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