

The Impact of an Instructional Development Program on College of Agriculture Faculty Members' Teaching-focused Social Capital: A Mixed Methods Approach

Gangseok Hur¹, T. Grady Roberts², James "J.C." Bunch³, John Diaz⁴, and David Diehl⁵

Abstract

The social aspects of faculty instructional development programs are increasingly recognized because the programs' impact is greatly influenced by social interactions among faculty participants. These interactions allow faculty members to reflect on and improve their teaching practices. Although the literature has shown that effective instructional development programs help develop faculty's educational knowledge, attitudes, and teaching practices, little research has investigated how instructional development programs help faculty develop their teaching-focused social capital. To address this knowledge gap, this study examined the impact of an instructional development program, Teacher's College, on faculty participants' teaching-focused social capital development. The findings from the mixed-methods study indicated that Teacher's College positively affected faculty participants' teaching-focused social capital by promoting connections with individuals across the college and providing a supportive learning community. This study also found that online and socially distant meetings due to the pandemic and geographic distances diminished faculty participants' opportunities to develop their social network and social capital. Based on the findings, we propose recommendations for Teacher's College and future research in the evaluation of faculty instructional development programs.

Keywords: college of agriculture faculty; instructional development program; program evaluation; teaching-focused social capital

Introduction

In higher education, faculty members have increasing pressures to improve their instruction and student learning (Saroyan & Trigwell, 2015; Van Waes et al., 2018). While research in higher education often involves collaboration and support, teaching is often

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considered to be a relatively solitary endeavor (Van Waes, Van den Bossche, Moolenaar, De Maeyer, et al., 2015). Although a faculty member is an expert in their content areas, being an expert in the content is insufficient to effectively teach others (Van Waes et al., 2018). As such, isolated teaching is not adequate for enhancing faculty teaching practices and supporting students' learning (Van Waes et al., 2018).

Higher education institutions provide faculty with various instructional development opportunities to improve their teaching practices. Previous research has shown that effective instructional development programs help develop faculty members' educational knowledge, attitudes, and teaching practices (Steinert et al., 2016). Along with the impact of faculty instructional development on the human capital development of faculty, the social aspects of faculty instructional development programs are increasingly recognized because interactions with colleagues greatly influence the sharing of knowledge and experiences and the programs' impact (Postareff et al., 2007; Van Waes, Van den Bossche, Moolenaar, De Maeyer, et al., 2015; Van Waes, Van den Bossche, Moolenaar, Stes et al., 2015). Faculty members' social interactions play a critical role in acquiring teaching-related resources, information, and expertise, which affect their learning and professional development (Benbow & Lee, 2019; Pataraiia et al., 2014). Discussions of teaching in an open and supportive environment benefit faculty members' teaching practices because conversations around teaching can provide them opportunities to receive feedback to improve their teaching practices (Benbow et al., 2020) and promote reflection (Rienties & Hosein, 2015).

Social capital is a critical concept in understanding the role of social interactions and networks on a person's access to information and resources (Lin, 2001). It is typically defined as "the resources that an individual can access through his or her personal network" (McCarty et al., 2019, p. 148). Teaching-focused social capital is a specific type of social capital in teaching, which is described as "the knowledge and resources for teaching practice that are accessible through a social network" (Baker-Doyle & Yoon, 2011, p.75). Previous studies have investigated university faculty members' social network characteristics and conditions of faculty members' teaching-focused social capital development. For example, Benbow and Lee (2019) explored the relationships between instructors' structural and positional characteristics and their teaching-focused personal network. They found that years of teaching experiences, time commitment to teaching, discipline, and institution type correlated with a teaching-focused social network. Furthermore, Benbow and Lee's (2020) study revealed that faculty members' teaching-focused personal networks' size, range, and strength positively correlated with their use of evidence-based teaching practices. In addition, other researchers examined university instructors' social network changes (Van Waes et al., 2015) and their quality of networks (Van Waes et al., 2016) in an instructional development program context.

While the previous studies provide valuable insights about faculty members' teaching-focused network and the conditions of social capital development, little research has investigated how instructional development programs help faculty members access teaching-focused social capital and what benefits can be generated from their teaching-focused social capital. Furthermore, although previous studies that focused on the social aspects of teacher professional development programs' impact in primary and secondary education exist (Baker-Doyle & Yoon, 2011; Penuel et al., 2009), a lack of knowledge on the impact of the instructional development program on participants' teaching-focused social capital was found in the higher education context. This study attempted to fill the knowledge gap by examining whether there are the significant effects of an instructional development program on the development of faculty

participants' teaching-focused social capital in a higher education context. Furthermore, it aimed to identify how the program affected faculty participants' teaching-focused social capital.

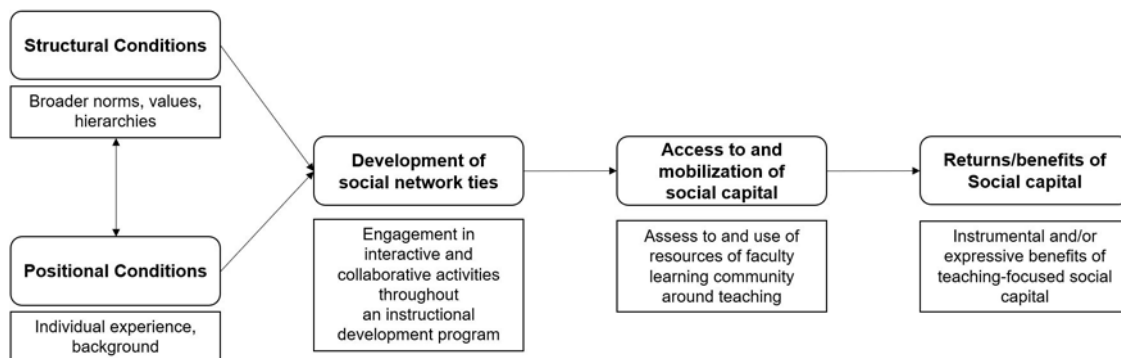
Theoretical and Conceptual Framework

To examine the impact of an instructional development program on faculty participants' teaching-focused social capital, the theoretical framework for this study was based on social capital theory (Lin, 2001; Putnam, 2000). The rationale for using this theory was that social capital theory provides a valuable lens to identify how a faculty instructional development program affected the participants' teaching-focused personal networks and social capital. Social capital theory emphasizes that social networks are valuable assets, and the idea of a relationship as a type of capital implies that connections can be profitable (Field, 2017). As such, social ties can offer individuals helpful information about opportunities otherwise not available (Lin, 2001). Social capital is described as resources embedded in social networks that can be accessed through social ties (Lin, 2001).

Lin (1999, 2001) proposed the modeling a theory of social capital, which describes a process of social capital development. The model proposes a causal sequence in which embedded resources facilitate and constrain individuals' choices and behaviors. The process starts with an individual's structural and positional conditions, which help them to develop beneficial social network ties. These beneficial social ties allow them to access and mobilize social capital, which consequently brings about returns/benefits of social capital (Benbow et al., 2020; Lin, 2001). The current study operationalized the key elements of the modeling a theory of social capital in the context of faculty instructional development based on previous studies (Benbow et al., 2020; Benbow & Lee, 2019, 2020), describing how an instructional development program influenced the development of faculty participants' teaching-focused social capital (see Figure 1).

Figure 1

Conceptual Framework of the Teaching-focused Social Capital Development Process



The structural and positional conditions of the social capital development process model indicate certain structural and positional factors that facilitate or inhibit the development of faculty members' teaching-focused social network ties (Benbow & Lee, 2019). For example, faculty members' participation in instructional development programs, departmental affiliations, positions, teaching and research interests may be considered structural and positional conditions that can lead to the development of their teaching-focused social ties among faculty members (Benbow & Lee, 2020).

The access to and mobilization of social capital stage describes the relationships with faculty participants' ties, enabling them to access and use social resources regarding teaching (Benbow & Lee, 2020). For instance, if faculty members communicate with their social ties, such as departmental colleagues, department chairs, and teaching and learning experts about teaching (e.g., asking for feedback on their teaching practices or ideas), the faculty members mobilize their social resources from social ties, which can yield returns and benefits (Benbow & Lee, 2020).

Last, regarding the returns/benefits of social capital stage, if faculty members apply the feedback from colleagues to modify their courses or teaching practices, they may acquire returns or benefits regarding their teaching (e.g., improved teaching practices, increased teacher self-efficacy) from their social investment (Benbow & Lee, 2020). Social capital provides material or non-material resources such as information, knowledge, support, and advice, which help individuals accumulate various benefits (capital) [Benbow & Lee, 2019; Benbow et al., 2020].

Purpose and Objectives

This study aimed to identify the impacts of an instructional development program on faculty participants' teaching-focused social capital. Two primary research objectives guided this study:

1. Identify faculty participants' perceived changes in teaching-focused social capital after an instructional development program.
2. Describe how an instructional development program influenced faculty participants' teaching-focused social capital.

Methodology

Research Approach

To address the research objectives, we utilized an explanatory sequential mixed methods approach "in which the researcher begins by conducting a quantitative phase and follows up on specific results with a subsequent qualitative phase to help explain the quantitative results" (Creswell & Plano Clark, 2018, p. 77). In this study, quantitative data helped identify if there were any statistically significant differences in the scores of teaching-focused social capital before and after the program. Then, qualitative data helped elaborate those statistical results by exploring how Teacher's College influenced participants' teaching-focused social capital.

Description of the Program

The University of Florida (UF) College of Agricultural and Life Sciences (CALs) Teacher's College is an instructional development program designed to help faculty members develop their teaching knowledge and skills and engage them in a community of practice around learner-centered teaching (Roberts et al., 2019). The program promotes building a learning community by facilitating interactions and incorporating various group discussions and cooperative and collaborative learning activities. Teacher's College has operated in CALs since 2008. Program participants include tenured, tenure-track, non-tenure-track faculty members and post-doctoral researchers from all departments in CALs at UF.

The participants of Teacher's College meet weekly for two-hour sessions for 11 weeks during the fall semester each year. The Teacher's College program involves activities to achieve its goals. The main topics include learning principles, active learning, instructional design, teaching methods, student learning assessment, teaching in labs, scholarship of teaching and learning, distance education, and the promotion and tenure process at UF (Roberts et al., 2019).

Target Population and Sample

The target population of this study was faculty members in UF CALS who had participated in Teacher's College since 2008 ($N = 266$). A purposive and nonprobability sampling approach was used to collect data. The sampling criteria for selecting the participants were (a) participating in Teacher's College between Fall 2014 and Fall 2020, (b) being a current UF CALS faculty member, and (c) having a teaching appointment. Those who participated in the program between 2008 and 2013 were excluded from this study because they are more likely to have inaccurate memories regarding their experience with the program. Over seven years, from 2014 to 2020, 143 faculty members participated in the program. After excluding those who left UF or are current unit leaders, a total of 127 faculty members met the criteria and were considered the study's accessible population.

Quantitative Phase

Quantitative Study Participants

A total of 61 faculty members from 18 departments within UF CALS completed the quantitative portion of this study with a 48% survey response rate. To address the nonresponse error, we compared early to late respondents (Ary et al., 2014; Lindner et al., 2001). The first half of the respondents ($n = 31$) were grouped as the early respondent group. The last respondents were described as those who responded to the relative late stimulus. Lindner et al. (2001) recommended having at least 30 in the late respondent group. Based on their recommendation, the second half of the respondents who completed the survey after the last two reminders ($n = 30$) were categorized into the late respondent group. We used an independent t -test to compare the social capital scores for early respondents with late respondents. The result showed that there was no statistically significant difference in scores between early ($M = 4.02$, $SD = 0.61$) and late respondents ($M = 3.82$, $SD = 0.71$), $t(57) = 1.16$, $p = .57$, $d = 0.30$. The results indicated that the respondents were an unbiased sample (Ary et al., 2014; Lindner et al., 2001). Table 1 presents the selected characteristics of the survey respondents.

Table 1

Selected Characteristics of the Survey Respondents ($n = 61$)

Variables	Categories	n	%
Sex	Male	31	50.8
	Female	30	49.2
Race/Ethnicity	White	38	62.3
	Black or African American	2	3.3
	Hispanic, Latino, or Spanish origin	7	11.5
	Asian	9	14.8

Variables	Categories	<i>n</i>	%
Highest degree	More than two races	5	8.2
	Doctoral degree	55	90.2
	Master's degree	5	8.2
	Bachelor's degree	1	1.6
Position	Professor	1	1.6
	Associate professor	5	8.2
	Assistant professor	37	60.7
	Lecturer	16	26.2
	Other (research assistant professor)	1	1.6
	Not identified	1	1.6
Discipline	Natural and applied sciences	43	70.4
	Social sciences	14	23.0
	Not identified	4	6.6
Level of Instruction	Lower-division undergraduate course	17	27.9
	Upper-division undergraduate course	51	83.6
	Graduate course	47	77.0
Year of Program Participation	2014 (Total participants = 14)	2	3.3 ^a
	2015 (Total participants = 10)	5	8.2 ^a
	2016 (Total participants = 20)	1	1.6 ^a
	2017 (Total participants = 28)	13	21.3 ^a
	2018 (Total participants = 28)	14	23.0 ^a
	2019 (Total participants = 17)	8	13.1 ^a
	2020 (Total participants = 26)	18	29.5 ^a

Note. ^aPercent of program participants in this study.

Quantitative Study Instrument

This study was a part of a larger evaluation of an instructional development program at UF. We developed all survey instruments used in this study based on previous literature regarding social capital (Lin, 2001; Putnam, 2000). The survey instrument was comprised of three major sections: (a) perceived level of teaching-focused social capital before and after the program, (b) perceived level of the impact of Teacher's College on the teaching-focused personal network and social capital, and (c) selected characteristics of the survey respondents. A team of three faculty members in agricultural education, three faculty members specialized in program evaluation, and one doctoral student in agricultural education from UF evaluated the instrument for face and content validity.

Perceived Level of Teaching-Focused Social Capital. The first section focused on the perceived level of teaching-focused social capital before and after the program, which included overall teaching-focused social capital and seven domains of teaching-focused social capital. All items were assessed using a five-point, Likert-type scale ranging from 1 (*Not at all*) to 5 (*To a very great extent*). Regarding overall teaching-focused social capital, participants were asked to

indicate the extent to which they perceived receiving adequate resources and support regarding teaching. In addition, the seven domains of teaching-focused social capital included (a) course planning and development, (b) teaching methods, (c) assessing student learning, (d) online education, (e) interaction with students, (f) classroom management, (g) scholarship of teaching and learning. The Cronbach's alpha for pre-and post-program questionnaire responses were .907 and .897, respectively, which were considered good reliability estimates (Pallant, 2016).

Perceived Level of the Impact of Teacher's College on Faculty Members' Teaching-focused Personal Network and Social Capital. In the second section, participants were asked about their perceptions of the impact of Teacher's College on their teaching-focused personal network and social capital. Participants were asked to indicate the extent to which they agreed with the two statements using five-point Likert-type scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*): (a) Teacher's College increased my access to resources and information related to teaching and learning and (b) Teacher's College established my new connections related to teaching and learning. This section consisted of single-item measures. Although single-item measures are criticized due to their vulnerability to random measurement errors (Hoeppner et al., 2011), the use of single-item measures can be appropriate if the construct of interest is clear to respondents (Ginns & Barrie, 2004; Wanous et al., 1997), such as the items in this study. Because all the variables in this section comprised single-item measures, no reliability statistics were calculated (Wanous et al., 1997). In the last section of the instrument, survey respondents were asked about demographic information, including sex, race/ethnicity, highest degree, position, discipline, level of instruction, and year of program participation.

Quantitative Data Collection

Respondents were asked to participate in an online Qualtrics survey. We followed Dillman's Tailored Design Method to encourage survey response and ensure data quality (Dillman et al., 2014). The UF CALS Dean sent the first survey invitation email message to respondents to encourage them to participate in the survey in October 2020. After the invitation email, the lead researcher sent each respondent personalized reminder emails after two, four, and eight weeks for a total of four solicitations to help increase the response rate (Dillman et al., 2014). The final reminder email was sent in December 2020.

Quantitative Data Analysis

We used the Statistical Package for the Social Sciences (SPSS) to calculate descriptive and inferential statistics. Kolmogorov-Smirnov and Shapiro-Wilk tests were used to test the normality of the data (Pallant, 2010), and the results confirmed that all the domains of teaching-focused social capital data were normally distributed. Paired-samples *t*-tests were used to determine if there were any statistically significant changes in respondents' teaching focused-social capital. As a follow-up procedure, effect sizes were calculated using Cohen's *d* (Cohen, 1988). Cohen's *d* is obtained by calculating the mean difference between the two groups and then dividing the result by the pooled standard deviation (Cohen, 1988). The criteria for interpreting the strength of Cohen's *d* are as follows: Cohen's *d* .2 = small effect, .5 =medium effect, and .8 = large effect (Cohen, 1988).

Qualitative Phase

The quantitative results suggested the need for additional explanations, which guided the development of the qualitative phase (Creswell & Plano Clark, 2018). In detail, quantitative

results indicated that there were statistically significant increases in the participants' teaching-focused social capital. Most of the respondents perceived Teacher's College increased their access to resources and information related to teaching and learning and established new connections. In the qualitative phase, we focused on how Teacher's College influenced participants' perceived level of teaching-focused social capital to elaborate on the quantitative results (Creswell & Plano Clark, 2018). The qualitative data were investigated through the lens of social capital theory (Lin, 2001).

Qualitative Study Participants

Respondents in the quantitative phase were asked if they would be willing to participate in follow-up interviews. A total of 19 survey respondents were willing to be interviewed. We selected 14 participants based on their positions, discipline areas, sex, and race to reflect the diverse perspectives of program participants. Interview participants were assigned a code (i.e., F1, F2, F3, and so forth) based on the alphabetical order of participants' names to maintain confidentiality. Table 2 presents the selected characteristics of the sample in the qualitative phase.

Table 2

Selected Characteristics of the Interview Participants (n = 14)

ID	Positions	Sex	Race	Discipline Areas	Years of Program Participation
F1	Lecturer	Female	White	Natural and applied Science	2018
F2	Assistant professor	Female	White	Natural and applied science	2020
F3	Lecturer	Male	White	Natural and applied Science	2019
F4	Lecturer	Female	White	Social Sciences	2019
F5	Lecturer	Male	Non-White	Natural and applied Science	2020
F6	Assistant professor	Female	White	Natural and applied science	2020
F7	Lecturer	Female	White	Social Sciences	2016
F8	Assistant professor	Female	White	Social sciences	2019
F9	Assistant professor	Male	White	Natural and applied Science	2018
F10	Lecturer	Female	White	Social Sciences	2019
F11	Assistant professor	Female	White	Social sciences	2020
F12	Assistant professor	Male	Non-White	Social sciences	2018
F13	Assistant professor	Female	Non-White	Social sciences	2020
F14	Lecturer	Female	Non-White	Natural and applied Science	2020

Qualitative Study Instrument

The interview questions were developed to collect more in-depth information about the impact of Teacher's College on participants' teaching-focused personal network and social capital using open-ended questions (Table 3).

Table 3

Interview Questions focused on Participants' Perceptions of Teacher's College

Interview Questions	Categories
1. How much do you think Teacher's College influenced the development of your social support for teaching? a. How did your social network regarding teaching change after the program? b. What activities (aspects) of Teacher's College were most helpful for you in terms of having teaching resources, information, and expertise within your personal network?	Teaching-focused personal network and social capital
2. Can you describe how much Teacher's College helped you develop collaboration opportunities in terms of course development and research projects?	Collaboration opportunities
3. Overall, what were your key takeaways from Teacher's College?	Key takeaways
4. Could you provide us with any suggestions for the improvement of Teacher's College to better serve UF CALS faculty members?	Recommendations for program improvement

Qualitative Data Collection and Analysis

Interviews were conducted from December 2020 to January 2021. Interviews were implemented via Zoom, video-recorded, and transcribed verbatim. The constant comparative method (Corbin & Strauss, 2008) was used to analyze the data obtained from the semi-structured interviews. The constant comparative method is considered an essential element of all qualitative data analysis, which involves constantly comparing and contrasting the data (Harding, 2019). The method is useful for identifying similarities and differences between cases in a data set (Harding, 2019). In this study, the coding process of the constant comparative method involved three levels of analyses: (a) open coding, (b) axial coding, and (c) selective coding (Corbin & Strauss, 2008). During the first phase of the coding process, open coding, the researchers read each transcription line-by-line and then analyzed data using a descriptive coding procedure (Corbin & Strauss, 2008). In the process of axial coding, the researchers developed main categories and subcategories by collapsing open codes into broad categories and making comparisons between categories (Ary et al., 2014). Selective coding was then utilized to indicate how the categories were related (Ary et al., 2014).

Measures of Trustworthiness

Several strategies were used to meet standards for trustworthiness, including credibility, dependability, confirmability, and transferability (Lincoln & Guba, 1985). First, member checking was used to ensure credibility of the data. Interview participants were asked to review

the data collected by the lead researcher (interviewer) and the researcher's related interpretations. The principal researcher then had a weekly meeting with another member of the research team for peer debriefing. In addition, other researchers (peer reviewers) examined interview transcriptions with the researchers' interpretations to determine whether the interpretations were reasonable (Ary et al., 2014). Furthermore, intrarater and interrater agreements were used to assess the dependability of the qualitative data findings (Ary et al., 2014). In particular, during the process of interrater agreement, if there were any discrepancies in the coding, the coders discussed and reconciled them through consensus (Syed & Nelson, 2015). Confirmability of this study's findings was established by using an audit trail illustrating data analysis processes. In addition, detailed and thick descriptions of the context and participants were provided to ensure transferability (Ary et al., 2014).

Results

Objective 1. Identify Faculty Participants' Perceived Changes in Teaching-focused Social Capital after an Instructional Development Program

The quantitative results indicated that 77.0% ($n = 47$) of the respondents perceived that Teacher's College helped them increase their access to resources and information related to teaching and learning. In addition, 73.8% ($n = 45$) reported that Teacher's College established their new connections related to teaching and learning. Regarding the respondents' perceived level of overall teaching-focused social capital, 98.3% reported that they had more than a moderate extent of teaching-focused social capital. Using the paired-samples t -test, we found that there were statistically significant increases in the participants' teaching-focused social capital scores from before the program ($M = 3.02$, $SD = 0.82$) to after the program ($M = 3.92$, $SD = 0.69$), $t(59) = 9.76$, $p < .001$, $d = 1.20$. Furthermore, the results showed statistically significant differences existed in the scores of each construct of the teaching-focused social capital: (a) course planning and development, (b) teaching methods, (c) assessing student learning, (d) online education, (e) interaction with students, (f) classroom management, and (g) scholarship of teaching and learning. As a follow-up procedure, effect sizes were reported using Cohen's d (Cohen, 1988). The area with the largest effect size was the scholarship of teaching and learning (1.35), followed by teaching methods (1.17), course planning and development (1.02), assessing student learning (0.96), online education (0.88), interaction with students (0.69), and classroom management (0.66) [See Table 4].

Table 4

Participants' Perceived Changes in Each Construct of Teaching-focused Social Capital

Constructs	Pre/Post	n	M	SD	t	p	d
Course planning and development	Pre-program	60	3.12	1.03	7.87	0.001	1.02
	Post-program	60	4.05	0.79			
Teaching methods	Pre-program	60	3.12	0.87	9.07	0.001	1.17
	Post-program	60	4.07	0.76			
Assessing student learning	Pre-program	61	3.10	0.98	7.99	0.001	0.96
	Post-program	61	3.95	0.78			
Online education	Pre-program	61	2.95	1.12	6.52	0.001	0.88
	Post-program	61	3.87	0.96			

Constructs	Pre/Post	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
Interaction with students	Pre-program	61	3.33	1.00	5.79	0.001	0.69
	Post-program	61	3.95	0.83			
Classroom management	Pre-program	61	2.95	0.97	6.09	0.001	0.66
	Post-program	61	3.57	0.90			
Scholarship of teaching and learning	Pre-program	61	2.52	1.07	9.93	0.001	1.35
	Post-program	61	3.90	0.96			

Note. *n* = sample size, *M* = mean, *SD* = standard deviation, *t* = *t* score, *p* = *p*-value, *d* = Cohen's *d* statistic.

Objective 2. Describe How an Instructional Development Program Influenced Faculty Participants' Teaching-focused Social Capital

Building on the quantitative findings, the qualitative results provided a detailed description of how Teacher's College influenced faculty participants' teaching-focused social capital. The five emergent themes from the qualitative data were (a) connections, (b) learning community, (c) support networks, (d) collaborations, and (e) challenges. The definition of each theme is described in Table 5.

Table 5.

Definitions of Themes that Emerged from Qualitative Data

Themes	Definitions
Connections	Relationships faculty members have with the people around them
Learning community	A group of faculty members who share common goals and work collaboratively focusing on student learning
Support network	A group that provides practical and affective support to faculty members experiencing difficulties
Collaborations	Working together with other faculty members to achieve shared goals
Challenges	Difficulties that affect the development of faculty members' teaching-focused social capital

Connections

The results indicated participants appreciated the opportunity to network with various people across the college throughout the program. Statements from seven participants (F2, F3, F5, F6, F8, F11, F14) demonstrated that Teacher's College promoted social connections with others such as peer participants, facilitators, and administrators. The sub-themes of the connections involved (a) connections with peer faculty participants, (b) connections with facilitators, and (c) connections with college administrators. These connections are further explained below.

Connections with Peer Faculty Participants. Seven participants (F2, F3, F5, F6, F8, F11, F14) mentioned Teacher's College helped them connect with peer faculty members from their own and different departments. F3 shared: "It was just really helpful to meet people outside

of my department.” This sentiment was echoed by F6, who stated: “I liked having the diversity within the class from the different departments.” Along the same line, F8 also shared:

The opportunity to meet and just be in a space with colleagues across the college was really great. Especially because we are such a big university, here we are such a big college, we do not exist in the same buildings. We are probably not going to meet many people from [names of departments] unless there is some kind of intentional introduction.

In particular, the participants mentioned that small-group discussion sessions with other participants were effective in allowing them to share their ideas and facilitate connections with their cohort.

Connections with Facilitators. Teacher’s College also helped participants connect with facilitators in the program, which was described by four participants (F2, F7, F8, F10). The connections yielded various benefits. Two participants (F7, F10) stated that they received help from the main instructor in the program, specifically in reference to the scholarship of teaching and learning. Also, the other two participants (F2, F8) mentioned that the primary instructor of Teacher’s College connected them with other faculty members for their research projects.

Connections with College Administrators. Four participants (F3, F5, F7, F8) shared that Teacher’s College enabled them to connect and interact with college administrators such as a college dean and associate deans, which led them to perceive the college administrators as more approachable people. A lecturer (F3) shared:

I like that I got facetime with the dean. It is not always easy to go out to face time with the dean as a new faculty member. . . Through Teachers’ College, I actually got to know my deans better, which is great because you know they are people worth knowing.

Along the same line, F8 said: “I do feel like my experience in Teacher’s College moved them (the Dean and Associate Dean) into my network where I could have access to them if I needed it for something specific.”

Learning Community

Facilitators in Teacher’ College provided a supportive learning environment by encouraging participants to have open conversations about teaching, which led to the creation of a learning community. Four participants (F1, F3, F6, F13) mentioned that they gained new ideas and perspectives about teaching through group discussion sessions with others in a supportive learning environment. Among these, three (F1, F3, F6) explained that sharing ideas with other participants provided them with new ideas and perspectives about teaching. For example, F6 said: “Having access to these people and being able to talk about teaching allowed me to think about maybe I can implement something like that in my class.” Another respondent (F3) stated: “It (Teacher’s College) really encouraged everyone to share. . . we went around within our groups, and we introduced our activity and learning objectives.”

Support Network

The statements from five participants (F2, F3, F8, F11, F14) indicated that Teacher’s College provided faculty participants with a support network. The sub-themes of the support network included (a) fellowship and (b) support group.

Fellowship. Two participants (F2, F8) mentioned that they built fellowship with other participants at a similar career stage to them. Sharing ideas with their colleagues provided opportunities to build strong peer relationships among participants and offered emotional support for them. F2 expressed this concept well:

Knowing that there are other faculty who are kind of at the same stage and working through the same kinds of issues. . . I think that is, in a way, comforting or providing some reassurance that I am not trying to do this all by myself. There are other people going through the same process.

Similarly, F8 stated: “It was a really nice opportunity to build this camaraderie of you are not alone. . . Here are some of your colleagues from across the college that you are going to run into because you are kind of at that same starting spot. I think there are lots of good things that come out of it.”

Support Group. Four participants (F2, F3, F11, F14) mentioned that Teacher’s College offered a support group of people who can provide them with advice and encouragement. For instance, F2 stated: “I do like knowing that there are those people that I could reach out to if I needed to.” Similarly, another faculty participant (F3) stated:

It (Teacher’s College) really made me feel like I got to know these people. I could send them an email if I ever needed or wanted. . . I feel like I would be comfortable doing that because I had the opportunity to interact with them through Teacher’s College.

Collaborations: Teaching/Research/Extension Collaboration Opportunities

The benefits of participants’ teaching-focused social capital included various collaboration opportunities. The statements from seven participants (F2, F3, F4, F6, F8, F11, F14) demonstrated that Teacher’s College promoted collaborative opportunities related to teaching, research, and Extension. The sub-themes that related to collaborations included (a) collaborative course design, (b) collaborative research projects, and (c) collaborative Extension projects.

Collaborative Course Design. Two program participants (F3, F4) stated that Teacher’s College offered course design collaboration opportunities with peer participants and facilitators in the program. For example, one lecturer (F4) mentioned that they collaborated with another program participant from a different department on course development and said, “We chatted every now and then in terms of helping out with some course development.” Another lecturer (F3) mentioned that they considered a collaborative course design with other participants who showed interest in their course during the group discussions.

Collaborative Research Projects. Five participants (F2, F6, F8, F11, F14) stated that they had conducted collaborative research projects or intended to collaborate with other participants on research projects. Two participants (F6, F8) described that connections in Teacher’s College, particularly with the primary instructor of the program, offered them the opportunity to collaborate with other participants on research projects. For example, F8 shared: “The primary instructor connected her with me. . . It actually turned out to be a really great thing for both of us.” In addition, four participants (F2, F6, F11, F14) described that while they had not been involved in any collaborations with other program participants yet, they had a desire to connect with their cohort or a program facilitator for research collaborations.

Collaborative Extension Projects. Collaborative work on an Extension project was another benefit of developing social capital through Teacher's College. One program participant (F2) stated they connected to one member of their cohort in Teacher's College for their departmental Extension project.

Challenges that Diminished the Opportunity to Develop their Social Capital

Several participants (F3, F6, F7, F10, F13) mentioned various challenges that diminished the opportunity to develop their social capital, including (a) online and socially distanced meetings due to the COVID-19 pandemic and (b) geographic distance (i.e., not being at the main campus location). These conditions decreased the chances of developing interpersonal relationships with other program participants and facilitators. As a consequence, it diminished their capacity to develop their teaching-focused social capital that could have benefited their teaching and other collaborative opportunities.

Online and Socially Distanced Meetings due to the COVID-19 Pandemic. In 2020, Teacher's College had to shift its delivery mode from face-to-face meetings to online and socially distanced face-to-face meetings due to the COVID-19 pandemic. Three participants (F3, F6, F13) mentioned that online and socially distanced meetings prevented them from getting to know each other personally and made it more difficult to share ideas and collaborate on projects. For example, F6 shared: "Doing it mostly on Zoom inhibited a lot of us from being able to work with each other and getting more ideas flowing." Similarly, another participant (F13) said:

We had to do a lot of our sessions online, and even in-person sessions, we were socially distanced. . . I think we can work to develop it, but we would have to put in a lot of extra effort to get to know each other in a way that probably would not have had to happen if we were able to meet in person.

Geographic Distance. Two interview participants (F7, F10), who were located geographically distant from the UF main campus, mentioned that distance from the main campus forced them participate in Teacher's College online, which inhibited them from effectively interacting with their cohort. F7 shared: "If I had an in-person experience, I would maintain those relationships." Along the same line, another faculty (F10) stated: "I am off-campus, so I did not really make a great connection with the other people at Teacher's College because I was meeting with them online and was not in the same classroom."

Conclusions

This study investigated the impact of an instructional development program on the development of faculty members' teaching-focused social capital using a mixed methods approach. The findings indicated that Teacher's College positively affected faculty participants' teaching-focused social capital by expanding their access to teaching resources and information, which demonstrated the effective features of the program's design and implementation. The results were aligned with a previous study (Yoon et al., 2020) on the impact of a professional development program on teachers' social capital development. Social capital theory offered more comprehensive insights into the faculty instructional development programs' impact on faculty participants' teaching-focused social capital development.

The teaching-focused social capital development process model developed based on previous studies (Benbow et al., 2020; Lin, 2001) provided a valuable framework that helped us understand the process of how faculty participants' teaching-focused social capital developed. In

terms of the structural and positional conditions and the development of social network ties stage, participants indicated that Teacher's College helped them establish new connections related to teaching. In particular, the interactive activities throughout the program encouraged faculty participants to discuss teaching and develop relationships with other people across the college such as peer faculty members from different departments (program cohort), facilitators who are teaching and learning experts, and college administrators. This result was aligned with Van Waes et al. (2018) who found that a faculty development program strengthened teaching networks of its faculty participants. Their study reported that participants in the program developed larger and more diverse teaching networks than members of the control group (Van Waes et al., 2018). Similarly, Salaran (2010) argued that social ties and interactions are essential for the development of social capital as information and resources flow through social relations and interactions.

Furthermore, the access to and mobilization of social capital stage describes how social ties allow faculty members to access and use social resources regarding teaching (Lin, 2001; Benbow et al., 2020). Our quantitative results indicated that most participants perceived Teacher's College helped them increase their access to resources and information related to teaching and learning and enhanced their teaching-focused social capital. The findings indicated participants' social interactions through interactive activities in the program enabled them to access and use various resources, information, and support regarding teaching. In addition, the follow-up qualitative study found that Teacher's College helped participants engage in a learning community where they could share their teaching experiences and ideas with their colleagues and discuss effective teaching practices (Benbow & Lee, 2020). Participants mentioned that they acquired new ideas and perspectives about teaching through group discussion sessions in a supportive learning environment. The results were consistent with Ma and colleagues' (2019) study. They found that regular interactions and high communication among faculty members in a community of practice positively affected their knowledge sharing regarding teaching and professional learning. Another finding was that the primary instructor of Teacher's College played an important role in connecting different program cohorts for various collaboration opportunities. The result was aligned with the concept of social capital, which emphasizes that resources can be accessed through not only direct ties but also indirect ties (Lin, 2001). The result highlighted the important role of faculty development specialists in supporting the development of faculty members' teaching-focused social capital.

The final stage of the social capital development model (Benbow et al., 2020; Lin, 2001) involves the process in which social capital yields returns or benefits, including instrumental and/or expressive benefits (Lin, 1999, 2001). The quantitative study indicated that there were statistically significant increases in the participants' teaching-focused social capital scores after the program. Furthermore, the qualitative results showed that engaging in the instructional development program with their colleagues at a similar career stage provided faculty participants with opportunities to build a support network that provided them social support and encouragement. In addition, participants reported that Teacher's College promoted their social capital, which resulted in helping them engage in collaborative project opportunities that benefits their teaching, research, and Extension efforts. The results demonstrated that a learning community could yield various benefits. These findings were aligned with Salaran's (2010) study, which found that social interactions predict faculty members' research productivity.

In addition, the results showed that online and socially distanced meetings due to the COVID-19 pandemic and geographic distances diminished the opportunity to develop faculty participants' social networks and teaching-focused social capital. Participants indicated that the changed program delivery mode decreased their opportunities to develop trusting and collaborative relationships with their cohorts and facilitators. Thus, in the context of the

pandemic, it is critical to find innovative ways to promote participants' interactions and social capital that could benefit their teaching and other collaboration opportunities. Overall, this study demonstrated social interactions during an instructional development program promoted faculty participants' access to teaching resources, information, and support. Moreover, our study provided stakeholders of Teacher's College with strong evidence of its value and effectiveness as well as several applications for the design and implementation of faculty instructional development programs in the future.

Recommendations

This study provided a valuable contribution to the limited literature regarding the impact of instructional development programs on faculty members' teaching-focused social capital. While this research broadened the perspectives regarding the social aspects of a faculty instructional development program, we also found opportunities for the program improvement to better meet faculty members' needs. This study indicated that faculty participants desired to continue to develop supportive relationships with their cohorts and other groups for personal and professional development beyond the semester in which they participated in the program. In order to meet their needs, we encourage Teacher's College to offer annual reunion event to allow them to keep cultivating their relationship with their cohorts and develop new connections with other groups. This would enable program alumni to continue sharing innovative and effective teaching ideas and facilitate various collaborations.

In addition, this study indicated that remote participants encountered challenges in interacting with their peers and facilitators, which impeded their opportunities to develop teaching-focused social capital. To address this issue, the Teacher's College director needs to consider creating a more effective HyFlex (programs are delivered both in-person and online at the same time) learning environment. The director may collaborate with instructional designers and other education experts to develop a more effective and interactive HyFlex learning environment. This would help enhance distance participants' learning experiences by promoting their interactions and discussions, consequently facilitating their teaching-focused social capital development.

We also suggested recommendations for future research. The generalizability of the findings was limited because this study used a non-randomized sampling method, and the sample was restricted to faculty members in one research-intensive university in the United States. Future researchers should replicate this study with other faculty instructional development programs with random sampling methods, if feasible, to increase the generalizability of the findings and explore how social capital evolve in different contexts and cultures. Furthermore, since the majority of the interviewees were assistant professors and lecturers, associate professors and professors were not represented in the qualitative phase. Future studies should consider recruiting a more representative sample.

Last, this study demonstrated the practicality of social capital theory in understanding the process of teaching-focused social capital development. Kilpatrick et al. (2003) stated that social capital theory is a valuable framework for identifying the social resources in a community and evaluating the success of an educational intervention (Kilpatrick et al., 2003). Given little research has examined the impact of instructional development programs on social capital, more studies should measure faculty members' teaching-focused social capital as an outcome of faculty instructional development programs.

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