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The Qualitative Report

Volume 23 | Number 8 Article 6

8-7-2018

From Contemplation to Action: Mechanisms of Change in the Mentoring Academy

Linda S. Behar-Horenstein
University of Florida, lsbhoren@ufl.edu

Huibin Zhang
University of Florida, huibinzhang@ufl.edu

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Behar-Horenstein, L. S., & Zhang, H. (2018). From Contemplation to Action: Mechanisms of Change in the Mentoring Academy. *The Qualitative Report*, *23*(8), 1876-1888. Retrieved from https://nsuworks.nova.edu/tqr/vol23/iss8/6

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From Contemplation to Action: Mechanisms of Change in the Mentoring Academy

Abstract

Mentoring is fundamental to the professional development of research scientists in academic health centers (AHC). Qualified mentors can support the development of competencies considered most significant in training research scientists. Yet AHC faculty may have little preparation in and knowledge of how to mentor. Emerging AHC mentor academies provide educational environments whereby faculty can learn the art and practice of mentoring. However, little is known about their effectiveness. Using the Transtheoretical Change Model (TTM), this study explored how 23 mentors used newly learned information to change their communication styles and develop shared expectations with mentees. Based on an inductive analysis of 46 reflective writing assignments, the results showed that the mentor academy enabled progress through the stages of contemplation and preparation, however, mentors rarely implemented new knowledge to make changes in their approach to mentoring. The authors suggest instructional strategies that will promote actionable change and accountability for implementation.

Keywords

Educational Effectiveness, Mentor Academy, Mentoring, Reflective Writing, Transtheoretical Change Model

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Acknowledgements

Research reported in this publication was supported by the National Center for Advancing Translational Sciences of the National Institutes of Health under University of Florida Clinical and Translational Science Awards TL1TR001428 and UL1TR001427. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

This article is available in The Qualitative Report: https://nsuworks.nova.edu/tqr/vol23/iss8/6

The Qualitative Report 2018 Volume 23, Number 8, Article 5, 1876-1888

From Contemplation to Action: Mechanisms of Change in the Mentoring Academy

Linda S. Behar-Horenstein and Huibin Zhang
University of Florida, Gainsville, Florida, USA

Mentoring is fundamental to the professional development of research scientists in academic health centers (AHC). Qualified mentors can support the development of competencies considered most significant in training research scientists. Yet AHC faculty may have little preparation in and knowledge of how to mentor. Emerging AHC mentor academies provide educational environments whereby faculty can learn the art and practice of mentoring. However, little is known about their effectiveness. Using the Transtheoretical Change Model (TTM), this study explored how 23 mentors used newly learned information to change their communication styles and develop shared expectations with mentees. Based on an inductive analysis of 46 reflective writing assignments, the results showed that the mentor academy enabled progress through the stages of contemplation and preparation, however, mentors rarely implemented new knowledge to make changes in their approach to mentoring. The authors suggest instructional strategies that will promote actionable change and accountability for implementation. Keywords: Educational Effectiveness, Mentor Academy, Mentoring, Reflective Writing, Transtheoretical Change Model

Introduction

Evaluation studies of clinical translational science institution (CTSI) mentor programs have been limited in measuring their effectiveness (Feldman et al., 2012; Meagher, Taylor, Probsfield, & Fleming, 2011; Pfund et al., 2014; Pfund et al., 2013; Pfund, Pribbenow, Branchaw, Lauffer, & Handelsman, 2006; Pfund et al., 2015). Outcomes have typically been restricted to participant ratings (Chen, Sandborg, Hudgins, Sanford, & Bachrach, 2016). Continual efforts to evaluate effectiveness and to compare mentor programs across institutional settings continues to defy researchers. Differences in mentor programs (length, content, and the variety of learning platforms) have averted a systematic appraisal of the impact of AHC mentoring programs on the quality of mentor-mentee relationships (Martina, Mutrie, Ward, & Lewis, 2014). Despite these challenges, researchers report that face-to-face mentor training programs share similar characteristics such as: (a) establishing expectations; (b) promoting career development; (c) maintaining effective communication (Abedin, Rebello, Richards, & Pincus, 2013). There is, however, little research on what specific educational processes explain how research scientists are trained or the role that mentor training serves (Martina et al., 2014). Researchers suggest that skills necessary to performing research are often learned through collaboration and interaction with a more experienced and knowledgeable individual such as a mentor (Martina et al., 2014). A similar process is thought to be applicable to learning how to mentor academic health center (AHC) faculty. Cultivating mentors is believed to occur via communication with seasoned professionals in which younger or less experienced researchers obtain necessary skills to conduct experiments, develop proficiency in writing manuscripts and grants, and learn how to network and present at conferences.

As a multidimensional, idiosyncratic, and contextualized process, mentoring is influenced by culture and type of institution (Lumpkin, 2011). Usually tied to specific competencies, mentor training may focus on promoting or maintaining effective communication, addressing diversity (Bickel & Rosenthal, 2011), fostering independence, or promoting professional development of future scientists. Mentor development varies based on the types of competencies considered most significant in training. Mentor programs usually aim to promote individual advancement or to enhance the pipeline of institutional mentors. Another way to view the promise of mentor growth is to regard it as a journey through stages of change—as proposed by Prochaska and DiClemente in their Transtheoretical Change Model (TTM; Prochaska, Norcross, & DiClemente, 2013). Mentor academy program developers and instructors can utilize their awareness of participant placement along the continuum of change stages to select relevant activities (which address mentor knowledge gaps.) Thus, understanding the process of mentor development via the lenses of TTM has implications for evaluation practice. The purpose of this paper is to use TTM to evaluate mentor academy effectiveness and to make suggestions for improving the program.

Transtheoretical Change and Model Mentoring

Transtheoretical Change Model explains that individual behavioral change occurs within several stages (Prochaska & Velicer, 1997) along a continuum of behavior modification. This model differentiates between individuals that are ready for change and those that are subject to relapse (Littell & Girvin, 2002). Stage-matched interventions are considered more effective than action-oriented treatment (Littell & Girvin, 2002). The theory purports tailoring mentor programs that align with individual's inclination towards change when a mentor enters the academy. Consideration of the stage of change is essential to selecting specific educational activities that may enhance mentors' development. The TTM integrates four theoretical constructs: stages of change, decisional balance, self-efficacy, and processes of change. Stages of change are temporal dimensions that describe *when* change occurs and are accompanied by the processes of change which defines *how* changes occur along with decisional balance that focuses on the pros and cons of a specific behavior.

Stages of Change

Pre-contemplation. During pre-contemplation**,** most individuals are unaware or under-aware of their problems. Mentors may present for training due to pressure from others, or they may be motivated by the potential to build their academic dossier. At this stage, a faculty member does not intend to change his or her behaviors in the forthcoming six months. Illustrative of pre-contemplation are mentors' beliefs that they do not have any problems or situations that necessitate change (see Figure 1).

Contemplation. At this stage, mentors typically recognize that they are experiencing problems. Although they are thinking about ways to overcome those problems, they have not decided to act. One indicator of this stage is a person's willingness to change within a six-month period. Serious consideration of problem resolution is also central to contemplation.

Preparation. This stage combines intention and action. Individuals in the preparation stage intend to take actions in the next month or have unsuccessfully taken actions within the past year. At this stage, a mentor is planning to implement new strategies of communication and thus needs additional support and monitoring to move forward.

Action. At this stage, individuals change their behaviors, their experiences, and/or their environment. While committed to modifying behaviors, they also recognize that sustained perseverance and energy is needed. Individuals in the action stage have successfully altered

behavior for a period spanning from one day to six months. They may describe change efforts as hard work or identify how they are implementing new approaches to mentoring.

Maintenance. At this stage, people try to preserve their changes and prevent relapse. Maintenances lasts around six months. The hallmark of maintenance is stabilization of behavioral change.

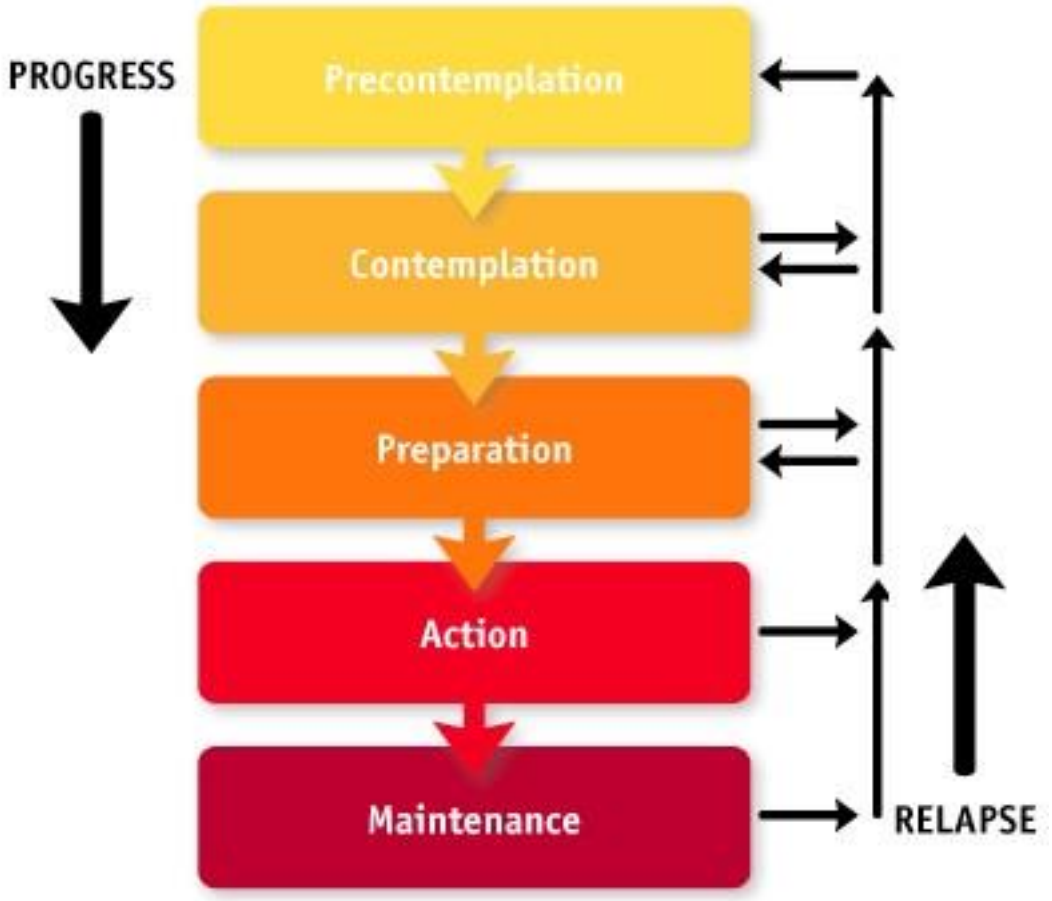

Figure 1. The Stages of Change. Taken from: The stages of Change Model (2010, August 30). The Stage of Change [Photograph]. Retrieved November 16, 2017, from https://www.addictioninfo.org/articles/11/1/Stages-of-Change-Model/Page1.html.

Individuals who modify thinking, emotions, or behaviors regarding problems are engaged in change processes (Prochaska, Norcross, & DiClemente, 2013). There are two main categories of change processes: experiential and behavioral. Experiential change processes are related to raising awareness of the problem, while behavioral processes are tied to actively working on resolving the problem by making change in attitudes, beliefs, or participation practices (Prochaska, Norcross, & DiClemente, 2013). The study described in this paper was situated at an AHC. Faculty mentors enrolled in a mentor academy program with the purpose of promoting their individual development and capacity for mentoring students and junior faculty. The intent of this study was to explore the participants reported experiences through the lens of TTM.

Table 1. Data Driven Codes, Definitions, Quality Observed for Self-Assessed Communication Style and Plan to Create Shared Expectations and Examples

Code	**Definition**	**Quality Observed for Self-assessed Communication Style**	**Quality Observed for Plan to Create Shared Expectations**	**Example**
Pre-contemplation	Individuals are tentative in their identification of a potential issue because they are unaware or under aware that there is a problem. Thus, they indicate no intention to change behavior in the foreseeable future.	Response to the communication exercises	Address unidentified issues that might arise	Amanda discovered that she would probably "need to schedule meetings on an as needed basis to address issues that might arise."
Contemplation	Individuals express an awareness that a problem exists but at this stage, do not describe a plan for how to address that problem.	Promote more effective interactions	Awareness of how they mentored	Frank vowed to "force [himself] to communicate and…be more upfront" with those mentees.
Preparation	Individuals describe how they are intending to take action in the very near future.	Action to avoid interactions	Actions they planned to take in the future	Mary expected her mentees "to set an agenda for each meeting" have clear expectations for mentoring and establish "a long-term goal."
Action	Individuals describe how they have changed their behavior, experiences, and/or environment.	Foster graduate student's independence	Developing mutual mentor-mentee interactions	Jeremy asked his mentees "to come prepared to answer the following questions at the first meeting: (1) What scientific development do you expect to achieve from your experience in my laboratory meeting? (2) How do you expect to grow professionally from your experience in my lab? (3) What other development are you hoping to achieve from your experience in my lab? (4) What are your expectations of me during your tenure in my lab?"

Methods

Researchers' Perspectives

The research team included one faculty member and one doctoral student in school psychology. The first author is an experienced qualitative and educational researcher from the College of Education who studies outcomes that accrue from pedagogical interventions and

explores changes in faculty beliefs related to teaching, educational research, and assessment practices. Her research initiatives encompass faculty development, cultural competency, and the assessment of behavioral, cognitive, and attitudinal change. She is also the Director of the Office of Educational Development and Evaluation for the institution's CTSI, and thus is responsible for evaluating this program and other educational initiatives that are supported by this grant. The second author is a research assistant for the first author. He has training and expertise in school psychology and experiences with qualitative research as an undergraduate such as studying how intimate partner violence influences children's values of marriage with grounded theory. Moreover, he is familiar with stages of change theory as it applies to substance abuse intervention from his studies in a master's degree program in counselor education. The researchers' interest in this study emanated from observation of inconclusive findings reported in the literature relative to the effectiveness of AHC mentoring programs and a lack of qualitative study on mentors' perceptions of those programs. Up to this point, program evaluations conducted for the mentor academy have relied solely on the use of a pre-test/post-test survey.

The Mentor Academy Program

The Mentor Academy, a semester-length, 16-week program, consisted of eight group meetings across four months in which participants discussed and learned about topics ranging from research ethics to communication skills to understanding mentees' learning styles. The program was designed to support faculty development of effective mentoring practices and to cultivate a network of master mentors at the university. Participants who expressed interest in learning about mentoring enrolled in the academy. The criteria for program entry were that the applicant (a) conducted biomedical research; (b) actively mentored early career investigators. The program was designed to ensure that participants developed the best mentoring practices and that the process led to cultivating a network of master mentors at the AHC. There was no formal application or selection process. Participants with an expressed interest in learning about mentoring enrolled in the academy.

Sample Description

Ten females and 13 males, three assistants, one clinical assistant, 11 associates, and eight professors participated in this study. Collectively, they mentored a range of individuals from students (i.e., undergraduate, post-doctoral and clinical fellows, pre-doctoral clinical translational science awardees, Ph.D. students, or master's degree students) to medical or health care professionals to faculty (i.e., junior faculty or K faculty awardees: individuals seeking to conduct research on clinical translational science). Mentoring experience ranged among the participants from seven to more than 20 years.

Research Approach

The university's Institutional Review Board (IRB #2015-U-1302) approved all study procedures and participants provided written informed consent. Prior to beginning the mentor academy program, the researchers invited 23 participants to answer two reflective writing prompts via SurveyMonkey at specified points in time. Following mentor academy sessions that covered these particular topics, participants were asked to discuss: (1) how what they learned about their self-assessed communication style would inform future interactions with mentees; and (2) how they planned to create shared expectations with their mentees in the future. After participants completed the mentor training program, their reflective writings for

each prompt were downloaded and de-identified into separate excel spreadsheets prior to analysis.

Data Analysis

Our research team independently read the two sets of reflective writing prompts and then met to discuss their initial impressions. We used line-by-line coding to identify the text that represented each of the stages of TTM (see Table 1). Using an analytic, inductive approach, we synthesized initial codes and created code categories to interpret the data (Boyatzis, 1998; Fereday & Muir-Cochrane, 2006; Hesse-Biber & Nagy Leavy, 2011). Selected excerpts were compared, and the process continued until agreement was reached (DeCuir-Gunby, Marshall, & McCulloch, 2011; see Figure 2). The researchers agreed that a participant was at an identifiable TTM stage when he/she was using words and phrases that were consistent with the definition of that stage.

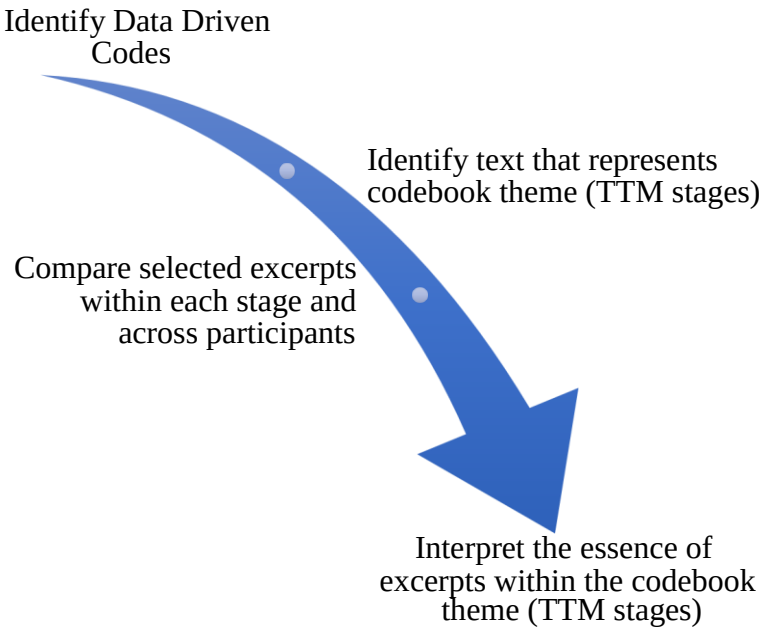

Figure 2. Analysis of Data Driven Codes

Attention to credibility, transferability, and confirmability facilitated establishing trustworthiness. Credibility, confidence in the truth of the findings, was achieved through triangulation and peer debriefing. Triangulation was accomplished by: (a) using two analysts; (b) reviewing 46 reflective writings; (c) using qualitative analytical tools including line by line coding and peer debriefing to ensure the accuracy of interpretations. Transferability, the degree to which results of qualitative research can be transferred to other contexts or settings, was addressed by using the same cohort group in the analysis (Lincoln & Guba, 1985). Confirmability was achieved by engaging more than one person in analyzing the data. Validation of the analysis was enhanced by the presence of two experienced qualitative researchers (Creswell, 2015).

Inductive analysis is used when a search for themes that emerge as being important to the description of the phenomenon is the primary goal. Application of this method involves: (a) coding and regarding particular text as important prior to the interpretation; (b) organizing the data to identify and develop themes; (c) thematic identification: a process that emerges from pattern recognition within the data. Inductive analysis is the process of identifying the patterns, themes, and categories that emerge out of the data rather than them being imposed a priori.

Driven by what the researchers want to know, this method was used to analyze the participants' subjective descriptions of their experiences (Saldaña, 2015).

Results

In the following sections, we describe the mentor academy participants' stages of change in relationship to their communication styles and discuss if and how they planned to create shared expectations with mentees. For each finding, we first describe the quality that is supported within a particular stage of change (see Table 1). Second, we introduce the excerpt that evidences the finding's quality. Third, we explain how the data represents the quality that we claim it signifies and provide analytical comments that support the relationship between the quality asserted and the excerpt presented.

Learning about Communication Style

Overall, the mentors asserted that this new knowledge guided their ability to: (a) modify the content of what they told mentees; (b) maintain an awareness of mentee needs; (c) foster interactions; (d) use communication strategies effectively to promote mentee productivity.

Pre-contemplation. After learning about his preferred communication style, John described his response to the communication exercises and stated that it "prompted enjoyable and interesting dialogue." He surmised that participating in this activity and listening to others' comments could "help broaden perspectives of our own style." This finding was expressed in the third person voice rather than in the first-person voice. Notably, John did not explain if or how he plans to use his newly acquired information. Although he opined that using the self-assessment communication inventory was "a useful tool . . . beneficial to improv[ing] team work," he did not identify a potential issue in his own communication style—probably because he is unaware or under aware that there is a problem.

Contemplation. Denise stated that learning about varied communication strategies would promote interacting more effectively with individuals whose communication styles differed from her own. Describing how newly learned information might foster more effective mentee interactions indicates an awareness that her current approach was problematic. However, also consistent with the characteristics of this TTM stage, she did not describe a plan to address that problem. Along the same lines, Gail, spent more time developing the interpersonal aspects of the mentoring. She explained that her emphasis on developing relationships with the mentee was driven by a hope to "be seen as approachable." However, she acknowledged that this approach delayed her ability to provide scientific insight. Despite not having a plan for ameliorating this problem, she stated that learning about communication styles called this limitation to her attention.

Others reported how their communication styles stifled interactions. After becoming aware of his dominance, Scott planned temper his "'lead singer syndrome' to give his mentee "an opportunity to have their own solo." Mentors who dominated meetings unwittingly squashed student's ability to share his thinking or to verbalize his reasoning about failed experiments or his efforts to develop studies independently. Leslie, who was "otherwise organized, independent, and efficient," became impatient under stressful situations. Impatience can be perceived as an unwillingness to work towards group consensus. When other group members internalize an individual's impatience, it may foster conflict and impede productive meeting outcomes because it splits a member's attention between the task and the other person. Similarly, Amanda admitted that her prevalent focus on task/performance orientation led others to perceive her as controlling. For Scott, Leslie, and Amanda, their behaviors limited the

potential for group cohesion and prevented tolerance of behaviors that were perceived as antithetical to group norms.

Preparation. After receiving results of his self-assessment communication inventory, Frank realized that his practice of avoiding interactions with mentees thwarted communication opportunities. He identified this tendency as a problem. Consistent with the intent of the preparation stage in which individuals describe how they are intending to take actions in the very near future, Frank reported that he planned to address avoiding interactions: "by be[ing] more attentive [to] how many times a day I interact with each mentee."

Action. Anna used her communication style awareness to foster a graduate student's independence and to assist a student who was writing a grant proposal. Although typically "disorganized [and] multi-tracking," Anna reported that she set timelines, provided well written examples, and identified training opportunities to assist her mentee in developing the proposal. Anna's enactment and description of her behavioral change is consistent with behaviors that typify the action stage.

Working to Create Shared Expectations with Mentees

Participants described how mentor academy experiences increased participant awareness of how to foster mutual mentor-mentee interactions and how they used or planned to use newly learned strategies.

Pre-contemplation. Amanda discovered that she would probably "need to schedule meetings on an as-needed basis to address [unidentified] issues that might arise." Despite no further description of issues that might arise or a specific plan of action, she asserted that the mentor academy program offered many ideas that could be used to foster mentees' professional growth.

Contemplation. Participants discussed how the mentor academy sessions fostered an emergent awareness of how they mentored. Edward reported his intention to ensure that both he and his mentees articulated their expectations at the onset of the relationship. He suggested that establishing shared expectations was crucial to solidifying a mentee/mentor match. In the absence of an appropriate match, he suggested that "shared goals would be difficult—if not impossible."

A more remarkable discernment was how the mentor academy previously abated misconceptions. Lauren previously assumed that "expectations [for mentees were] obvious" and did not need to be laid out in detail. Once this assumption was challenged in the mentor academy, she moved from the stage of pre-contemplation to contemplation. Therefore, the mentor academy evoked a motivation to make changes that led towards creating shared expectations in the mentoring relationship. Lauren mentioned her intention to "do a better job of articulating expectations and strategies" with her mentees.

As participants became more adept in implementing the knowledge obtained, contemplation leaned more towards preparation, and individuals identified the need for change. Along with support for individualization of the mentoring process, participants referred to mentees' future placements. For example, Anna realized that her mentoring approach lacked "accountability [for] when things do not get done" and a realization that "leniency is not the same as being understanding."

Preparation. During the preparation stage, individuals described the actions they planned to take in the future. Gail planned to prepare "timelines and milestones as references." Russell intended to develop a handbook outlining his general expectations, to schedule follow-up meetings, to review expectations, and to update plans. He decided that initial meetings would now include a discussion of mentorship, expectations, and the development of an online document. He planned to offer career advice, guidance about work/life relationships, and

delineate his expectations for presentations, publications, and scholarship. To keep mentees aware of whether they met his expectations, Jerry intended to "review the individual development plan (IDP) and provide comprehensive feedback." Scott intended to establish "measurable outcomes including scholarly productivity, academic performance, time management, and year-end milestones."

Action. While some participants described how they planned to develop shared expectations, only Jerry described how he was using skills that were taught in the program and developing mutual mentor-mentee interactions. Also, Jeremy asked his mentees to come prepared to answer the following questions at the first meeting: "(1) What scientific development do you expect to achieve from your experience in my laboratory meeting?; (2) How do you expect to grow professionally from your experience in my lab?; (3) What other development are you hoping to achieve from your experience in my lab?; (4) What are your expectations of me during your tenure in my lab?" Simultaneously, he arrived at the same meeting with answers to questions regarding "(1) the scientific abilities he expected his students to develop while in his lab; (2) the professional development he expected; (3) logistical expectations (e.g., amount of time spent in the lab or the amount of time spent outside of lab)."

Discussion

As shown in this study, information reported in the reflective writings showed that, most often, participants were at the contemplation stage. Evidence of the pre-contemplation and preparation stages were less frequent; the action stage was rarely represented: only on three occasions. Some participants evidenced signs of moving towards the preparation stage; however, it is unknown over what period of time they were planning to implement new skills into action. In Prochaska's TTM, a person is thought to be in the preparation stage if he or she planned to take actions in 30 days. However, since participants were not asked to disclose when they were planning to change their behavior, this remains unknown. Nonetheless, their reflective papers reveal they were talking about steps they planned to take in the near future, indicating that they were planning to take an action.

The TTM encompasses not only stages but also processes of change. The mentor academy program seemed to influence consciousness, as evidenced by participants' transition from contemplation to preparation. Although these findings portrayed ideation about implementation of new skills, most participants did not advance further.

The process of change requires an effort and commitment to take classroom learning and apply it to relevant circumstances. Based on participant information, the mentor academy emphasized developing new skills. However, participant placement in the TTM change stages varied considerably. While in the stage of pre-contemplation, mentors reported that didactic information offered ideas for professional growth. However, they did not attach this information to their own mentoring or translate it into working with students. Individuals frequently remained at the pre-contemplation stage when the disadvantages of making change outweighed the advantages or when they found the disadvantages untenable. Acknowledging a need for change may be resisted by overwhelming feelings of anxiety and fear. Facing the ambiguity of the unknown or stepping out of a routine social role and becoming a novice in front of others can be particularly unsettling. The prospects of social evaluation by others may heighten anxiety.

Despite well-documented benefits (Feldman et al., 2012; Meagher et al., 2011; Pfund et al., 2014; Pfund et al., 2013; Pfund et al., 2006; Pfund et al., 2015), little is known about how AHC mentor academy programs impact participants' thinking about how they use or plan to use what they have been learning. The TTM highlights the premise that behavioral change unfolds over time when it is aligned with specific stages and changes processes. Applying new

knowledge may not occur until participants have internalized new concepts and ideas. Tailoring the mentor academy program learning activities to the change theory would facilitate bridging factual and conceptual knowledge with practical implementation. As individuals learn new skills, they are driven to assimilate new information into action. However, the pace in which individuals accommodate and faithfully use new knowledge is variable. Therefore, if there are no procedures for integrating new and existing knowledge, it is unlikely that participants will fully enact new learning into action, maintenance, and termination stages. According to the TTM Prochaska, Norcross, and DiClemente (2013), such processes require integration and proximate feedback reinforcement.

The researchers recommend revising the mentor academy program expectations so that participants are required to use new knowledge during the course of training and report the outcomes of implementation. Learning activities that include formative and continuous assessment can propel movement through the change stages. When mentor academy programs developers are aware of the stage of change that mentors are in, they can use this information and provide relevant activities which address knowledge gaps. One way to document mentors' placement in TTM is through reflective writing. Previous studies have shown that reflective writing reveals participant understanding about information obtained and provides insight regarding how participants plan, and ultimately implement, new ideas (Behar-Horenstein, Schneider-Mitchell, & Graff, 2009; Gibbs, 1988; Isaac, Kaatz, Lee, & Carnes, 2012; Mezirow, 1990; Moon, 1999; Schön, 1987; Thorpe, 2004).

Based on the findings of this study, mentor program developers are encouraged to implement the following experiential learning activities: (1) Ask participants to share how they use newly acquired information and strategies while enrolled in the course; (2) Ask participants to report on the impact of that activity; (3) Encourage academy instructors to discuss with participants how interactions among people with diverse communication styles foster and/or impede group interactions; (4) Brainstorm with academy participants regarding how to foster effective problem-solving and conflict resolution while working with people whose diverse communication differ from theirs.

To deepen an understanding of program efficacy, the researchers encourage evaluating outcomes that examine the sustainability of training. This process could be accomplished by evaluating mentee and mentor perceptions via semi-structured interviews or by using pre- and post-test measures. To ensure that program evaluation is robust, methods of assessing effectiveness should explore the impact of interventions that target progress through the action stage and require a focus on understanding how program learning activities lead to successive progression in the TTM stages. Using interview methods prior to and following training could be especially helpful. Moreover, efforts directed at aligning program activities with change stages could delineate strategies that promote progression compared to those strategies that do not.

Limitations of this study include the use of a participant sample at a single institution. However, we believe this was moderated via two analysts and an exploration of 46 reflective writings.

This study shows how a mentor academy program facilitated movement through TTM stages of contemplation and preparation; it rarely resulted in actionable change. Since participants' abilities to apply newly learned concepts and strategies is variable, this finding might not be surprising. Fostering awareness of a need to change is only the initial step. Efforts that motivate and propel participants towards deeper growth are needed to support continued allocation of resources. The following recommendations are offered.

1. Develop learning activities that are directed towards promoting actionable change.

2. Require participants to implement strategies and report the success of those efforts while they are enrolled in training. Offer praise for successful implementation and advice to guide subsequent implementation efforts.
3. Offer coaching to ensure that strategies are faithfully implemented.
4. Consider lengthening the program to 32 weeks to permit implementation of strategies and reporting outcomes.
5. Use reflective writing assignments to periodically assess participating mentor placement in the TTM stages. Engage evaluators who are not engaged in mentor academy instruction to analyze participants' reflective writings and report findings to the mentor academy program direction. Share results of that analysis with participants.
6. Assess the longitudinal impact of mentor training by interviewing those mentees who have interacted with mentors prior to and after they complete the academy training program.

References

Abedin, Z., Rebello, T. J., Richards, B. F., & Pincus, H. A. (2013). Mentor training within academic health centers with clinical and translational science awards. *Clinical and Translational Science, 6*, 376–380. doi:10.1111/cts.12067

Behar-Horenstein, L. S., Schneider-Mitchell, G., & Graff, R. (2009). Promoting the teaching of critical thinking skills through faculty development. *Journal of Dental Education, 73*, 665-75

Bickel, J., & Rosenthal, S. L. (2011). Difficult issues in mentoring: Recommendations on making the "undiscussable" discussable. *Academic Medicine, 86(10),* 1229–1234. doi: 10.1097/acm.0b013e31822c0df7

Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage Publications.

Chen, M. M., Sandborg, C. I., Hudgins, L., Sanford, R., & Bachrach, L. K. (2016). A multifaceted mentoring program for junior faculty in academic pediatrics. *Teaching and Learning in Medicine 28*(3), 320–328. http://dx.doi.org/10.1080/10401334.2016.1153476.

Creswell, J. W. (2015). *Educational research: planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle, NJ: Pearson.

DeCuir-Gunby, J. T., Marshall, P.L., & McCulloch, A. W. (2011). Developing and using a codebook for the analysis of interview data: an example from a professional development research project. *Field Methods, 23*(2), 136-155. https://doi.org/10.1177/1525822X10388468.

Feldman, M. D., Steinauer, J. E., Khalili, M., Huang, L., Kahn, J. S., Lee, K. A., … Brown, J. S. (2012). A mentor development program for clinical translational science faculty leads to sustained, improved confidence in mentoring skills. *Clinical and Translational Science, 5*(4), 362–367. doi: 10.1111/j.1752-8062.2012.00419.x

Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods, 5*(1), 80-92.

Gibbs, G. (1988). *Learning by doing: a guide to teaching and learning methods.* London, UK: Further Education Unit.

Hesse-Biber, S., & Nagy Leavy, P. (2011). *The practice of qualitative research* (2nd ed.). Los Angeles, CA: Sage.

Isaac, C., Kaatz, A., Lee, B., &, Carnes, M. (2012). An educational intervention designed to

increase women's leadership self-efficacy. *CBE Life Sciences Education, 11*(3), 307-22. doi: 10.1187/cbe.12-02-0022

Lincoln, Y. S. & Guba, E. (1985). *Naturalistic inquiry.* Newbury Park, CA: Sage

Littell, J. H., & Girvin, H. (2002). Stages of change. *Behavior Modification, 26*(2), 223–273. doi: 10.1177/0145445502026002006

Lumpkin, A. (2011). A model for mentoring university faculty. *The Educational Forum, 75*(4), 357-368. doi: 10.1080/00131725.2011.602466

Martina, C. A., Mutrie, A., Ward, D., & Lewis, V. (2014). A sustainable course in research mentoring. *Clinical Translational Science, 7*(5), 413-419. doi: 10.1111/cts.12176

Meagher, E., Taylor, L., Probsfield, J., & Fleming, M. (2011). Evaluating research mentors working in the area of clinical translational science: A review of the literature. *Clinical Translational Science, 4*(5), 353–358. doi: 10.1111/j.1752-8062.2011.00317.x

Mezirow, J. (1990). How critical reflection triggers transformative learning. In J. Mezirow (Ed.), *Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning* (pp. 1-20). San Francisco, CA: Jossey-Bass.

Moon, J. (1999). *Reflection in learning and professional development: theory and practice.* London, UK: Kogan Page.

Pfund, C., House, S. C., Asquith, P., Fleming, M. F., Buhr, K. A., Burnham, E. L., ... & Shapiro, E. D. (2014). Training mentors of clinical and translational research scholars: A randomized controlled trial. *Academic Medicine: Journal of the Association of American Medical Colleges, 89*(5), 774-782.

Pfund, C., House, S., Spencer, K. C., Asquith, P., Carney, P., Masters, K. S., McGee, R., Shanedling, J., Vecchiarelli, S., Fleming, M. (2013). A research mentor training curriculum for clinical and translational researchers. *Clinical Translational Science, 6*(1), 26-33. doi: 10.1111/cts.12009

Pfund, C., Pribbenow, C. M., Branchaw, J., Lauffer, S. M., & Handelsman, J. (2006). The merits of training mentors. *Science, 311*(5760), 473-474.

Pfund, C., Spencer, K. C., Asquith, P., House, S. C., Miller, S., & Sorkness, C. A. (2015). Building national capacity for research mentor training: an evidence-based approach to training the trainers. *CBE-Life Sciences Education, 14*(2), ar24.

Prochaska, J. O., Norcross, J. C., & DiClemente, C. C. (2013). Applying the stages of change. In G. P. Koocher, J. C. Norcross, & B. A. Greene (Eds.), *Psychologists' desk reference* (pp. 177- 181). New York, NY: Oxford University Press.

Prochaska J. O., & Velicer W. F. (1997). The transtheoretical model of health behavior change. *American Journal of Health Promotion, 12*(1), 38–48. doi: 10.4278/0890-1171-12.1.38

Saldaña, J. (2015). *The coding manual for qualitative researchers.* Thousand Oaks, CA: Sage Publications.

Schön, D. A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions.* San Francisco, CA: Jossey-Bass.

The Stages of Change Model. (2010, August 30). *The stages of change*. Retrieved from https://www.addictioninfo.org/articles/11/1/Stages-of-Change-Model/Page1.html

Thorpe, K. (2004). Reflective learning journals: From concept to practice. *Reflective Practice, 5*(3), 327–343. doi: 10.1080/1462394042000270655

Author Note

Linda S. Behar-Horenstien, PhD is Distinguished Teaching Scholar and Professor and Director, CTSI, Educational Development and Evaluation. Correspondence regarding this article can be addressed directly to: lsbhoren@ufl.edu.

Huibin Zhange is a doctoral student in School Psychology at the College of Education at the University of Florida. Correspondence regarding this article can also be addressed directly to: huibinzhang@ufl.edu.

Research reported in this publication was supported by the National Center for Advancing Translational Sciences of the National Institutes of Health under University of Florida Clinical and Translational Science Awards TL1TR001428 and UL1TR001427. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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Article Citation

Behar-Horenstein, L. S., & Zhang, H. (2018). From contemplation to action: Mechanisms of change in the mentoring academy. *The Qualitative Report*, *23*(8), 1876-1888. Retrieved from https://nsuworks.nova.edu/tqr/vol23/iss8/6