How Learning Transfers: A Study of How Graduates of a Faculty Education Fellowship Influenced the Behaviors and Practices of Their Peers and Organizations

Margaret M. Plack, PT, DPT, EdD, Ellen F. Goldman, EdD, Marilyn Wesner, EdD, Nisha Manikoth, EdD, and Yolanda Haywood, MD

Abstract

Purpose

Faculty development programs have been criticized for their limited assessment methods, focused only on the learners and limited to satisfaction measures or self-reported behavior changes. Assessment of organizational impact is lacking. This study explored the impact of faculty education fellowship graduates on their organization and how that impact occurred.

Method

The design was a qualitative study of 13 departments across three institutions, partnered with the George Washington University School of Medicine and Health Sciences. In-depth interviews with 13 supervisors and 25 peers of graduates

were conducted in fall 2012 to examine graduates' organizational impact related to program purposes: enhancing teaching skills, pursuing scholarship in education, and developing leadership potential. Triangulation, purposive sampling, rich descriptions, and member checks minimized bias and optimized transferability.

Results

A model of how graduates of a faculty education fellowship transfer learning to peers and their organizations emerged. Analysis of interview responses showed that in the presence of environmental facilitators, graduates exhibited enhanced confidence and five new behaviors. Graduates raised peer awareness,

leading to changes in individual and group practices and development of shared peer understanding. Analysis suggests they facilitated a culture of continuous learning around teaching, scholarship, and leadership.

Conclusions

This study enhances traditional assessment of faculty education fellowship programs by examining the impact that graduates had on peers and work groups. A model is proposed for how graduates interact with and impact work group processes and practices. This model can facilitate more comprehensive program assessments, which can demonstrate program impact beyond the individual participant.

Faculty development has been used to assist medical education faculty in improving practice and meeting the increasing demands of their roles as teachers, scholars, administrators, and leaders. In designing faculty development programs, best practice includes clear assessment procedures.[1] Recent reviews of the medical education literature indicate that assessment methods need to be more rigorous and varied, move beyond self-report of behavior change, and extend beyond the individual learner to the impact on the workplace community.[2,3] Assessment should include organizational

impact, which is the highest level of Kirkpatrick's program assessment, rather than simply satisfaction and individual learning or behavior change.[4]

Criticism of assessment practices extends to fellowship programs where single cohorts of teaching faculty participate in intensive development activities focused on enhancing teaching skills, scholarly dissemination, and curriculum design.[5,6] Although more varied assessment methods have been used, focus generally remains on changes experienced by the individual learner. Participant satisfaction is the most common measure of assessment, and longitudinal inquiries suggest that changes include participant knowledge, skills, self-perceptions, and social networks.[5–8]

The call to expand program assessment to the workplace community is the result of the significant funds devoted to faculty development as well as the recognition that changed behaviors (of teaching, scholarship, leadership) are context-specific and socially experienced.[4] The business literature indicates that only

a small percentage of what is learned in development programs transfers to job performance—as little as 10% for leadership programs, according to one study.[9] Further, contextual factors such as task relevance and peer and supervisor support are key to increased learning transfer.[9,10] Accordingly, in their model for future faculty development research in medical education, O'Sullivan and Irby[3] have identified four components of the workplace community that may influence the impact of faculty development programs: workplace tasks and activities; relationships and networks; mentoring and coaching; and organizations, systems, and culture. Among the questions they posed for exploration are whether what is taught in the program is actually used in the workplace and how program participants engage their colleagues to change practice.

Our study was designed to determine what impact, if any, graduates of the Master Teacher Leadership Development Program (MTLDP), a faculty education fellowship of the George Washington

University School of Medicine and Health Sciences (SMHS), had on peers and work units and how that impact occurred. We sought specifically to better understand outcomes and processes. We framed this study around questions raised by O'Sullivan and Irby[3] and sought to move beyond the individual participant to determine the impact of the faculty development program on peers and workplace practices.

Method

The MTLDP is a yearlong faculty fellowship program aimed at helping faculty enhance their teaching skills, pursue scholarship in education, and develop their leadership potential. The program consists of six graduate courses in adult learning, curriculum design, assessment, qualitative research, teamwork, and leadership. Participants met one-half day per week throughout the year.

Initiated in 2002, the program has graduated 104 medical and health science faculty employed at three different institutions in Washington, DC: the George Washington University SMHS, Children's National Medical Center (CNMC), and the District of Columbia Veteran's Administration Medical Center (DC-VAMC). To better understand the impact MTLDP graduates had (if any) on their organization (i.e., Kirkpatrick's Level 4),[4] we used a 60-minute semistructured interview protocol to elicit peer and supervisor perceptions of the graduates' impact across all program aims: teaching, scholarship, and leadership (Supplemental Digital Appendix 1, http://links.lww.com/ACADMED/A230). We pilot tested the interview protocol for clarity and audiotaped and transcribed interviews verbatim. The George Washington University institutional review board approved the study. We obtained informed consents verbally from all participants prior to data collection.

The academic dean at each institution identified a purposive sample of supervisors and peers from work units/departments where at least two MTLDP graduates practiced. A research assistant (N.M.) sent e-mails describing the study and soliciting their interview participation during fall 2012. Participation was voluntary and unrelated to any evaluation, and no incentives were offered. We considered the following criteria in selecting participants: diversity of specialties across the three sites, and perspectives of supervisors and peers who had been in their positions to see the graduates before and after program completion so they could describe any changes during and after their participation in MTLDP. Participation implied consent, which was confirmed at the start of each interview.

We invited 17 supervisors and 32 peers to participate.

Our research team consisted of four faculty members, two from the Graduate School of Education Human Development (GSEHD) including the MTLDP director (E.G.), two from SMHS, and one research assistant from GSEHD. With the exception of the program director, none of us served as program faculty. To mitigate potential bias, with few exceptions, the interviewers were matched with interviewees we had never met. All interviews were transcribed and member checked. We began inductive analysis with one researcher (N.M.) examining data for clusters of meaning. Initial codes were developed and applied to sections of the data by four additional researchers (E.G., M.P., Y.H., M.W.). During this process, we continually compared data in search of emergent themes. Themes and linkages were continually drawn, revised, and verified.[11] We sought ongoing consensus to ensure accuracy of the findings. Themes were compared across categories of participants (supervisors, peers) and locations. We sought and further explored negative cases.[12] The process continued until no new codes and themes emerged and we unanimously confirmed the accuracy of the findings.

The following served to maximize the credibility and trustworthiness of this study: triangulation using multiple researchers and sources of data; purposive sampling for diverse perspectives; use of rich descriptions to support the emergent themes; ongoing search for negative cases; member checks; and researchers functioning as peer reviewers and devil's advocates for each other in interpretation and presentation of findings.[13] We made methods transparent to enable readers to judge the credibility and transferability of the findings and conclusions.[14,15]

Results

Of the 17 supervisors invited to participate, 4 declined, 3 because they were retiring, and 1, recently promoted, did not have time. Of 32 peers, 7 declined; 4 indicated they did not have direct awareness of the graduates' educational endeavors, 2 cited lack of time, and 1 wanted to participate but traveled extensively and could not be scheduled. In total, 13 supervisors (6 from SMHS; 5 from CNMC; 2 from DC-VAMC) and 25 peers (11 from SMHS; 10 from CNMC; 4 from DC-VAMC) were interviewed. Only two departments at the DC-VAMC had graduates of the program—thus the lower number of participants.

Our analysis of interview responses provides evidence that enhanced confidence and five related behavior changes in the MTLDP graduates raised their peers' awareness of effective teaching approaches that incorporated active learning strategies and adult learning principles, systematic approaches to scholarship and assessment, and valuable leadership skills and behaviors. Interview comments indicate that over time, peer behaviors and practices changed, shared understanding developed, and a culture of continuous learning emerged across the work unit. Participants identified a critical mass of work unit graduates and educational leadership opportunities as factors that enabled graduates to impact their workplace community. Our findings were consistent across supervisors and peers at all three locations. We describe each theme below along with exemplary supporting quotes.

Enhanced confidence and changed behaviors

Supervisors and peers alike noted an increased confidence in graduates of the MTLDP, which was evident in their roles as teachers, scholars, and leaders. Several quotes illustrate this change in confidence:

> [They] are much more confident in their educational acumen … more comfortable proposing different initiatives because they have more of the theory behind them. (S)

> Seeing that person as a resource and a go-to, take on a leadership role whether it's in a research project or organizing something within the department … it's easier to see the increased confidence … it's definitely somebody who has learned leadership skills that are helping them be more active as a member of the department. (S)

There's also the confidence in leadership skills that were developed by participating in that program … it's interesting because even the[graduates] … who are senior have developed leadership skills that they didn't have before. (S)

Supervisors and peers noted behavior changes across all three program aims (teaching, scholarship, and leadership). MTLDP graduates became resources and shared expertise with those within and outside their departments, modeled best practices and innovation, modeled systematic approaches, fostered collaboration, and assumed new leadership roles (Table 1).

Becoming resources and sharing expertise within and outside home departments. Graduates were described as offering advice, sharing ideas, introducing new techniques, brainstorming new strategies, and providing mentorship. Interviewees affirmed that graduates willingly shared their new knowledge and expertise in pedagogical approaches, research design, and leadership practices. Their comments identified helping with resident education, curriculum development, faculty training, accreditation issues, innovative problem solving, and more (Table 1). As one peer noted:

> [They] brought a much more sophisticated understanding of educational management as well as development and assessment to the whole [process]. (P)

Role modeling best practice and innovation. Participants' comments show that MTLDP graduates led by example as they incorporated adult learning principles, facilitated reflective practice, and encouraged active learning in their classrooms. They leveraged new technologies and were willing to try different pedagogies, and both offered and sought ongoing feedback. They reported taking the lead in scholarly activities and regularly presented at national conferences. In team meetings they described being assertive and directive, yet confident and calm. As leaders, they contributed effectively to discussions and maintained control of meetings while still providing space for all to speak (Table 1). One supervisor noted:

> They've certainly revolutionized the way we run our Thursday meetings.… There's a very palpable difference between the folks that have been through the Master Teacher program and those who haven't.…

The Master Teacher group is much more interactive and uses adult learning theory. It's … much more interesting to attend. (S)

Role modeling systematic approaches. Interviewees commented on how graduates stressed assessment beginning at the design phase of any new curriculum, project, or innovation, and viewed assessment as a means of continuous improvement. They reported being methodical in their planning and project management and in their approach to problem solving. Graduates distinguished themselves as being thorough in searching the evidence and maintaining rigorous standards in conducting research. They described being learner centered and outcome focused (Table 1). For example, one supervisor noted:

> It was (previously) a more loose kind of rotation … [Now it is] a much more structured process. And I think she got that from … the Master Teacher program. (S)

Fostering collaboration. Participants noted that graduates regularly felt comfortable working across disciplines. They described encouraging interactions and the development of shared meaning on teams. Participants' comments affirm that they willingly shared teaching material, inspired peers to join in scholarly pursuits, mentored fellows, offered scholarly presentations, and were strong advocates for collaborative work groups (Table 1). As one peer noted, "instead of working in our own little silos, people are working together."

Assuming new roles. Supervisors and peers agreed in observing that graduates were willing to take on new challenges and demonstrate a heightened sense of engagement in the organization. They were described as taking leadership roles in designing, evaluating, and presenting outcomes of innovative curricular models; publishing in leading medical journals; and regularly presenting at national meetings. Many accepted new leadership roles in their workplace, and some even assumed leadership at the national level (Table 1). One supervisor provided an example:

> In one instance, not only did this individual have the confidence to start a program.… But, at a national level … [the MTLDP] provided her the confidence to interface with other researchers … doing some interesting work.… [It gave her] the confidence to say, I'd like to participate. (S)

Raised awareness, shared understanding, and changed peer behaviors

Initial themes provided evidence of observed behavior changes in graduates. Additional themes provided insight into how these behaviors impacted peers and work group units. Graduate behaviors raised peer awareness of the impact of the MTLDP program and changed peer practices. Peers and supervisors noted how "things like reflection are … starting to permeate," "it rubs off on those around them, I don't know if it is diffusion or whatever," "I think it trickles down," and "other faculty who are nongraduates see [graduates in action] and [say] maybe I should do that too." As awareness was raised, participants' behaviors were reported to change as noted by these comments: "[graduates are] influencing us to have a higher level of rigor," "[they] influenced us to use reviews and feedback … [which is] the norm now," "[they are] influencing us to use different methodologies when one does not seem to work, based on our assessments."

As awareness increased and individuals began to change practice, a shared understanding developed and work group behaviors began to change, leading to a culture of continuous learning (Table 2). As one supervisor noted:

> The Master Teacher things codified the elements to talk about, for example, "gee, it's okay to recognize things didn't go well, but now, let's think more about what didn't go well and what can we do differently in the future."… A huge personal benefit is having them come back and reinforce … these things … there's a lot of collateral benefit.… There's recognition … that, this is a culture we want to aspire to … and the Master Teachers are our touchstones for energizing and reinforcing that. (S)

Facilitating a culture of continuous learning

Comments revealed that as a critical mass developed and graduates accepted educational leadership opportunities, a culture of continuous learning began to develop across the organization as illustrated by the following comments:

> Giving and receiving feedback has become the fabric of the culture.… Everyone is always learning and you have to be actively engaged in your own learning. (S)

> It's helped the whole culture within the division … promoting the idea that teaching is important and taking the old traditional approach is probably not the best way of going about teaching. (P)

Table 1
Themes of Observed Graduate Behaviors, Grouped by Program Purpose, From a Study of Peer and Supervisor Feedback About Faculty Participants in the Master Teacher Leadership Development Program, George Washington University School of Medicine and Health Sciences, 2012

Behavioral theme	Program purpose	Illustrative quotes
Became a resource and shared expertise	Teaching	They're perceived as having additional experience both in strategies for effective teaching with adult learners, better understanding, evaluation of performance and things like … so, I think people use them to bounce ideas off if they're doing a project or a working on the internal curriculum. (P)
	Scholarship	She was a remarkable resource for me and my fellow … her involvement with the curriculum was clear as she was helping us put together this research project. (P)
	Leadership	They're leaders. So they're known as leaders … that means people … leading these projects look to them for advice, look for them to be mentors, look for them on a project they may be working on getting their input. (S)
Role-modeled good practices	Teaching	It really opened his eyes to new ways of thinking and he's done enormously positive things with his course … he's clearly been influenced [by the program] which has influenced entire courses and then other faculty who are nongraduates see that and, okay, well maybe I should do that too. (S)
	Scholarship	I feel like I've learned from (the graduates).… I feel like I've benefited from people's experience with [Likert scales]. Without a doubt being surrounded by people who all have (research) projects going on is a stimulating environment. (P)
	Leadership	Professional in the sense that they're very accountable for their work. They're just—they're very well respected, they respect others. They follow through on all of their projects.… A lot of them are involved in different committees and they're, like all three would be the ones that are always there and contributing not just sitting and listening, they participate I think that's what's made the difference. They are just very engaged positive role models for Children's. (P)
		There's a skill set and a tool set that people learn during their Master Teacher that helps them become more effective leaders. (S)
Role-modeled systematic approach	Teaching	It was a more loose kind of rotation … then she wrote up goals and objectives, she [would] … basically have a questionnaire at the end of the month and evaluate the course … and she would build upon that. It was a much more structured process. (S)
	Scholarship	I'm a coinvestigator on a project that [X] is the principal investigator on right now.… I was impressed. She really did have a much better level of rigor in terms of technique: insisted we read these things and how we set up the interview … we went through everything much more systematically than if I were running it. (P)
	Leadership	I think [X] has shown some extraordinary leadership … in terms of having to solve that problem, trying to identify what's been going on … communicating with the leadership … trying to systematically go about it by writing letters to all of the people who come in for palliative care, letting them know that she's head of the team and then that they can call on her. So I think in that sense that she has shown some good leadership in trying to solve what is a difficult problem. (P)
Fostered collaboration	Teaching	She's taken simulation and integrated it into a multidisciplinary fashion where nurses, doctors, respiratory therapists … social workers occasionally, work together to stabilize a simulated scenario and she does that monthly on 7-East and then she helps other units to prepare their mock codes as well, and she's very excited with the multidisciplinary aspect of simulation and getting nurses and physicians to work together. So instead of working in our own little silos, people are working together.(P)
	Scholarship	He has us involved in a number of multi-institutional projects. He's worked with a number of fellows as a research mentor on projects. (P)
	Leadership	Dr. [X] has been you know a real advocate for … this collaborative working group and has really been the impetus and that to me is the sign of a leader, somebody that says let's put together a working group, let's move this forward, let's not forget about this, let's keep this going and without him sort of rallying to make it happen it probably wouldn't have happened. So I think … it's very clear … he's a good leader. (P)
Assumed new roles	Teaching	[X] was not the clerkship director when she went through the program but … as she finished the program and assumed that leadership role [she] has been, very productive.… She runs, if not the best, pretty close to the best clerkship we have in the third or fourth year, both in terms of the organization and the educational theory and the assessment of learners. A lot of the innovations she's brought … have been picked up now by other clerkships, some of whom are run by other Master Teachers. (P)
	Scholarship	A number of the faculty have been productive from scholarly perspective … at the (national) meetings, there's almost always a Master Teacher presenting something each year. (P)
		She, as a junior faculty, was first author in a (leading medical journal) … that's pretty impressive.… She's now superseded me. (S)
	Leadership	After this yearlong cohort, all three of them definitely took on a new maturity in how they performed their jobs … enough that they actually were able to move on into roles … higher roles, roles that gave back to the institution. (S)
		She became the director of the [X] course, which was completely … redesigned … under her leadership, so I think that was a big impact in the School of Medicine that she had for that. For (name) is now a dean in the medical school and has contributed in many ways in that position. (P)

Abbreviations: P indicates peer; S, supervisor.

Table 2

Themes of the Impact of Faculty Graduates on the Workplace, From a Study of Peer and Supervisor Feedback About Faculty Participants in the Master Teacher Leadership Development Program, George Washington University School of Medicine and Health Sciences, 2012

Themes	Illustrative quotes
Shared understanding	At a departmental level, interestingly we have had graduates at all levels … very junior faculty and very senior faculty who have participated, and one of the things that I have observed sort of from the outside is that—it breaks down the barriers of that hierarchy and allows for interactions among faculty.… So there's the obvious things like there's common ground; they've all been through the same thing so they have that to share. There's the … we're all speaking the same language now. (S)
	Because there are so many graduates and we're all talking together, that interactivity has influence … we're much more on the same page now and it's really gotten us ready to take this new leap to this new curriculum that we are about to do. (S)
Changing work group behaviors	I certainly see it as we develop new educational activities or even educational products in our department that the conversation starts with: What is it really important that the learner take away from this? And what does the learner bring to the table at the beginning of this process? And how do we look at this from the perspective of the learner? And how can we make this more self-directed and individualized and not just you know off-the-shelf or prepackaged? (P)
	I see especially the more recent graduates making changes in their curriculum that reflect things like reflection … you know for example in ways that I think are starting to permeate kind of like the old guard of how we teach you know at the institution. (S)
Culture of continuous learning and improvement	The thing that I would say has been most influenced is the culture of learning and then specific behaviors that are practiced by the Master Teacher graduates that help strengthen the culture that is susceptive to, and promotes learning. (S)
	The biggest impact is in terms of their approach, which before was positive but they gained some additional skills … it's helped the whole culture within the division in terms of promoting the idea that teaching is important and that taking the old traditional approach is probably not the best way of going about teaching. (P)
	She's done a great job of infus[ing] the academic mindset into that, so it's not just how do we establish more community hospital satellites that take care of patients but it's how do we embed education and research productivity, how do we develop those skills among our junior faculty members. (S)

Abbreviations: P indicates peer; S, supervisor.

A further comments was:

> There are enough of us … from the Master Teacher program … and an openness and acceptance of this by some … who haven't been through the Master Teacher program but have surreptitiously found a way to benefit from it.… And are all basically on the same page then it's pretty hard to have an educational meeting in our department where this doesn't … trickle into everyone. (P)

Discussion

O'Sullivan and Irby[3] called for studies of faculty development programs that move beyond outcomes of individual participants (i.e., "who" and "what") to include processes that impact workplace communities (i.e., "how"). In our study, interviewees observed increased graduate confidence, which enabled them to take on new roles, foster collaboration, and engage differently with peers. Graduates shared their expertise, became resources within and across departments, and modeled best practices, innovation, and systematic approaches. These behaviors further reinforced the graduates' confidence. As a result, interviewees noted, graduates raised awareness, influenced peer behaviors and work unit practices, fostered shared understanding, and facilitated continuous learning in the organization (Figure 1).

Our findings demonstrated that learning from a medical faculty education fellowship can transfer to nonparticipating peers and help to elucidate the learning transfer process. Our analysis of interviewees' comments goes beyond the "who" and the "what" to illuminate "how." In this case, the MTLDP impacted the individual participant and ultimately the workplace community. We believe this adds a dimension to O'Sullivan and Irby's model,[3] as reconceptualized in Figure 2, that describes how learning transfers to the work group. Further, having a critical mass of graduates and providing opportunities for leadership facilitated that learning transfer and fostered a culture of continuous learning within the work group.

Our findings are consistent with the workplace learning literature, which describes learning as a social process.[16] Transferring what one person learns to another in the workplace occurs through collaboration and participating in work activities together, exchanging information, receiving guidance, being coached, and observing and copying behaviors.[17,18] The workplace learning literature describes the transfer as taking place informally,[19] through both deliberate means such as mentoring, and incidentally as a by-product of task completion and meeting attendance. Our findings suggest that a significant portion of the transfer takes place incidentally and within work group units across the organization, which may mean that it is not acknowledged as learning within the larger organizational structure, thus limiting the recognition of the program's value.[20,21] Overall, our analysis indicates that the impact of a faculty development program on the organization—for instance, Level 4 as described by Kirkpatrick[4]—can be assessed and does occur.

Our interviewees identified critical mass and educational leadership opportunities as key factors aiding transfer. In another health care context, transfer of training was found to be absent because of fragmented organizational support, lack of time to practice what was learned, and lack of alignment with organizational strategy.[22] The graduates of the MTLDP had opportunity to apply what they learned pre- and post graduation, and were encouraged to do so, and the program aims are consistent with each of the three organization's overall direction of building teaching, scholarship, and leadership excellence. Although these additional factors were not explicitly stated in our findings, they may be equally important to learning transfer.

Our study findings are limited to one program and three participating organizations and did not attempt to
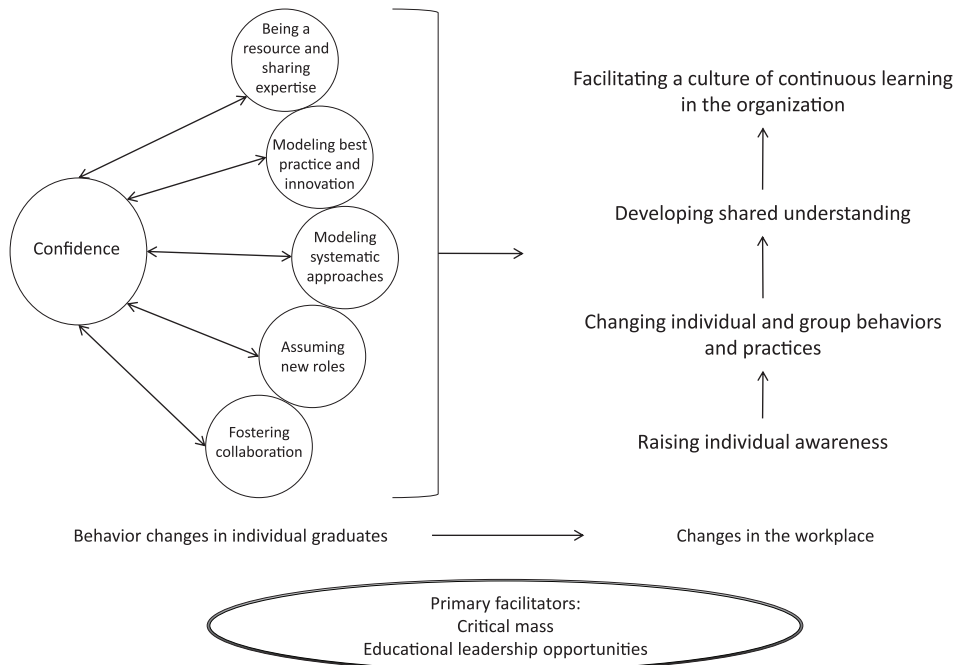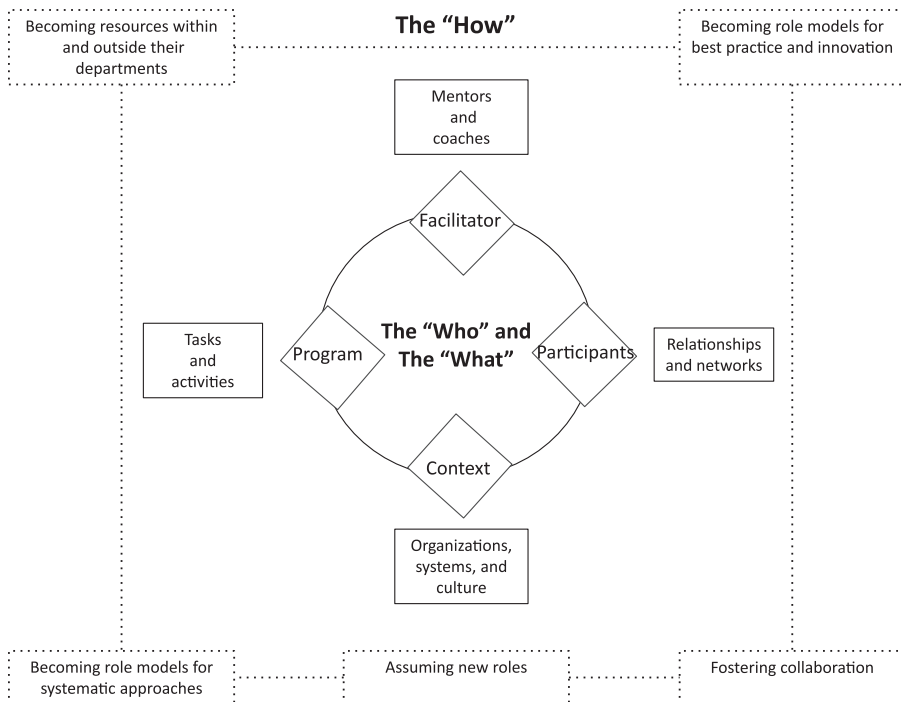
Figure 1 Model of how learning transfers from the individual participant to the work unit and organization, developed from a study of peer and supervisor feedback about faculty participants in the Master Teacher Leadership Development Program, George Washington University School of Medicine and Health Sciences, 2012.

quantify the degree to which program impact occurred. We focused on understanding how learning transfer took place, if at all. It is interesting to note that the findings did not differ across the three very different organizations, and the comments of supervisors and peers were similar. The procedures used to ensure the trustworthiness of the study helped enhance the transferability of the findings to other schools and programs.[11–15] Whereas this study focused on the process of learning transfer, in the future, rubrics related to the objectives of the educational leadership program may be developed and used as an outcome assessment across work units to assess the degree to which learning transferred.

The model of how MTLDP graduates interacted with members of their work groups to transfer their newly acquired knowledge can be used by other organizations to assess similar faculty development programs. We hypothesize that over time, and with participants from a critical mass of work groups, program impact will be achieved across the organization as a whole.

Dr. Plack is professor, Department of Physical Therapy and Health Care Sciences, School of Medicine and Health Sciences, George Washington University School of Medicine and Health Sciences, Washington, DC.

Figure 2 Model of faculty development and transfer of learning, developed from a study of peer and supervisor feedback about faculty participants in the Master Teacher Leadership Development Program, George Washington University School of Medicine and Health Sciences, 2012.

Dr. Goldman is associate professor of human and organizational learning, George Washington University Graduate School of Education and Human Development, and director, Master Teacher Leadership Development Program, George Washington University School of Medicine and Health Sciences, Washington, DC.

Dr. Wesner is assistant professor of human and organizational learning, George Washington University Graduate School of Education and Human Development, and director, Masters' Program in Human Resource Development, George Washington University Graduate School of Education and Human Development, Hampton Roads, Virginia.

Dr. Manikoth is research assistant, Department of Human and Organizational Learning, George Washington University Graduate School of Education and Human Development, Washington, DC.

Dr. Haywood is associate dean for student and curricular affairs and associate professor of emergency medicine, George Washington University School of Medicine and Health Sciences, and decanal liaison, Master Teacher Leadership Development Program, George Washington University School of Medicine and Health Sciences, Washington, DC.

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