Annotated Bibliography on Impact of Educational Development Interventions

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This bibliography was compiled from entries in a Zotero database developed for a study of literature on the impact of educational development practice published between 2000-2011, although a few older studies are included. An overview of the study methods and results can be found in Chism, N.V.N., Holley, M., & Harris, C. (2012). Researching the impact of faculty development: Basis for informed practice. In J. Groccia (Ed.), *To improve the academy* (Vol. 29). San Francisco: Jossey-Bass.

After two background sections that feature the literature on conceptualization and past reviews, the entries below are grouped by category of intervention. The goal of the project is to enable developers to locate studies of activities similar to those they are conducting or envisioning for the improvement of practice. An overall statement about the findings for each activity is excerpted from the TIA article.

**The Idea of Impact**

Several studies talk about levels or types of impact or outcomes accruing from educational development work. A sampling of these is below. The Belanger article contains a chart that is helpful in summarizing this important conceptual work.


In addition to a report of a specific evaluation (see the workshops section), this paper contains a thorough discussion on evaluating impact in its literature review. The authors have composed a chart that compares the schemes presented by other scholars on the types of impact that educational developers might assess in evaluating participant outcomes.


Chism and Szabo (1998) adapted ideas from Kirkpatrick (1998) into the domain of educational development, but included a focus on the learner rather than outcomes for the organization as a whole. Their levels are immediate satisfaction of the participant, change in teaching beliefs/knowledge, change in teaching behaviors, and change in student learning.


These authors review the concept of impact and conclude that a look at their annual reports presents a better picture than anything else. Demonstrating impact is often rhetorical and necessitated by the accountability movement. "In using the idea of impact, academic developers must be careful what they..."
wish for. There is a danger that, when used rhetorically, impact can produce exaggerated or misleading claims for what the work is about or what it can actually achieve" p. 103. In their view "effectiveness" is the better term. They claim that the best evidence will rely on external evaluation and benchmarking. The authors changed their focus from documenting the extensive presence of the unit, the accomplished performance of its work, to its maturity as a unit, finding this more helpful.


Guskey (2000) listed five levels for evaluating the outcomes of professional development in education, adding one to the list proposed by Kirkpatrick (1998): reaction of the participant, learning, use of knowledge and skills, student learning outcomes, and results on the organization and its mission.


Most papers on assessment in the area of educational development cite the work of Kirkpatrick, which began in the 1950s and was codified over the years in several publications. His four levels include: reaction (participant satisfaction), learning (gains in knowledge and skills), behavior (changes in performance while on the job afterward), and results (outcomes that accrued from the participants’ behaviors and knowledge).


Kreber and Brook (2001) asserted that impact can be assessed at six levels: 1) participants’ perceptions and satisfaction with the intervention, 2) their beliefs about teaching and learning, 3) their teaching performance, 4) students’ perceptions of the participants’ teaching performance, 5) students’ learning, and 6) the culture of the institution.


Smith (2004) added a focus on the career trajectory to the standard list of possible outcome dimensions, suggesting that impact can occur at the level of the individual participants, their careers, their students’ experiences, and the effect on the teacher’s department and the institution.


Steinert et al. (2006) developed six similar levels to those in Kreber and Brook (2001), adding a separate category for changes in teacher knowledge and skills to this list, and not dividing students’ perceptions and learning.

Stes, Min-Leliveld, Gijbels, and Van Petegem (2010), working from Steinert et al.’s (2006) framework, eliminated the satisfaction level, and added four levels of learning change for teachers (attitudes, conceptions, knowledge, and skills), three levels for student impact (perceptions, study approaches, and learning outcomes), and levels for teacher behavior change and institutional impact.

**Additional Overviews of Studies**

Four studies that have also summarized literature on impact are listed here, with short descriptions of their scope excerpted from our TIA article.


Bamber (2008) examined a selection of studies evaluating the results of academic development programs. She focused explicitly on how theory was used and on the stance of the evaluation. Bamber concluded that large-scale studies (cross-institutional, systematic) offer political advantages and the opportunity to use statistical techniques designed for large populations, but that small-scale studies, conducted in local settings with research designs that probe depth and supply detail, are especially useful. While emphasizing that evaluation is a complex and uncertain activity, she offered hope that patterns emerging from locally-designed and theory-based studies will offer important insights for practice.


Kucsera and Svinicki (2010) applied five standards of rigorous research to their examination of 750 studies that appeared in seven leading journals from 1997 to 2001. They excluded certain types of studies that did not meet seven criteria, such as focus on teaching and learning, about faculty, activity initiated by faculty developer, and containing a description of methods, which eliminated all but ten studies. One followed a strict qualitative design, two were quantitative, and the remaining seven were mixed method studies. The findings of the studies were not described by the authors of this paper, but on the basis of the search, the authors agreed with prior surveys of the literature, finding that rigor is lacking; they issued a general call for more rigorous work, stating that qualitative in-depth approaches are needed.


Steinert et al. (2006), using the framework described earlier, examined 53 papers that explored the results of educational development interventions for faculty in medicine. In their paper, they presented detailed summaries of eight exemplary studies. They found that most of these studies in the original
group looked at the clinical, rather than basic science, context of medical education and that 47 were quasi-experimental design (31 used pre- and post-tests) while six were based on randomized control studies. This pattern reflects the emphasis on evaluation in clinical courses and respect for traditional research designs. The studies generally found beneficial effects from educational development activities, citing changes in teachers’ attitudes, knowledge, skills, and behaviors, as reported by the teachers and their students. The authors found that few studies focused on the levels of student learning or organizational impact. They found that the strongest results were associated with interventions that included experiential learning activities in educational development interventions, used a variety of pedagogical approaches and good instructional design in interventions, provided frequent feedback, and created a positive social context for the faculty learners.


The extensive review done by Stes, Min-Leliveld, Gijbels, and Van Petegem (2010) was based on an initial 80 sources identified through using teaching development descriptors in the ERIC database in 2008. After applying criteria for inclusion, such as postsecondary context, intentional initiative, focus on impact, and empirical data, they selected 36 studies for further review on the basis of a scan of the abstracts. They coded each work on the type of outcomes measured, research design, nature of intervention, and results. They found that 31 studies focused on the teacher, 12 on the students, and 9 on the institution (some focused on more than one). All of the studies, except one that was inconclusive, found positive effects on at least one of the areas of impact that they studied, although several could not identify an impact on all of the areas they studied. The authors concluded that designs from 2000 to the present do not differ significantly from earlier ones. They acknowledged the challenges of studying impact and suggest that future research focus more on actual behavioral outcome measures instead of self-reported outcomes, stating that mixed methods studies, quasi-experimental designs, and use of standard instruments would improve the quality of future research.

**Workshops**


Bandiera, Lee, and Foote (2005) evaluated the impact of a half-day workshop for emergency medicine faculty. The workshop, which included a large group session and three small group sessions, centered around teaching initiatives in emergency medicine. An initial workshop evaluation was completed by the 15 participants using a 5-point scale and found participants viewed the workshop as relevant and useful. In addition, all 15 participants indicated their willingness to participate in future workshops. Following the initial workshop survey, 10 of the 15 participants completed a 4-month follow-up survey that found all 10 respondents had utilized a teaching strategy discussed in the workshop.

Bartlett and Rappaport (2009) completed a multi-year study of two educational development programs with a particular focus on sustainability and environmental issues at Tufts and Emory. Results from an electronic survey found that faculty significantly redesigned or developed new courses in addition to experimenting with new technologies.


Behar-Horenstein, Schneider-Mitchell, and Graff (2009) examined a faculty development program that sought to enhance participants’ use of critical thinking skills in teaching. Over the course of six weeks, seven faculty participated in a weekly two-hour faculty development workshop. The topics of the sessions ranged from teaching efficacy to peer observation. As part of the experience, participants responded to instructor-provided prompts in learning journals and presented two lesson plans. While the presentations were evaluated using a 5-point scale based on Paul and Elder’s criteria for critical thinking skills behaviors, Behar et al. also completed a document analysis of the learning journals to reveal themes that emerged. The key themes found in the qualitative analysis of the journals included participants’ being aware of learner needs, making changes in instructional strategies, and knowing how to encourage critical thinking.


Although this article is about evaluating all the services of this center, these are primarily workshops, with some consultations. It reports on a survey that sought answers to the impact of these interventions beyond participation and satisfaction. The authors found differences among the three groups of participants: teaching assistants or novice instructors, intermediate instructors, and experienced instructors. Changes in teaching behavior were highest for intermediate instructors, changes in educational development were lowest for experienced instructors, and impact on students and the organization were lowest for TAs and novice instructors. Overall, however, instructors were able to report high levels of learning gains and behavioral change, most of which revolved around the idea of student-centered teaching.


Berbano, Browning, Pangaro, and Jackson (2006) examined the outcomes experienced by eight faculty members in internal medicine who participated in the Stanford Faculty Development Program in Clinical Teaching on ambulatory teaching. The design of the workshop series consisted of seven two-hour sessions. Berbano et al. (2006) used taped observations of each program participant prior to and after their participation to determine the program’s effectiveness. The findings of the observations showed an improvement in teaching behaviors with particular emphasis on the quality of questions asked as well as improved learner feedback.

In an effort to provide teaching resources to community preceptors at the Texas A&M System Health Science Center College of Medicine, the center developed a required preceptorship program using traditional workshops and electronic resources. Bramson, VanLandingham, Heads, Paulman, and Mygdal (2007) examined survey results from 31% of the program’s 144 participants. While the survey had a low response rate, participant feedback indicated the program was helpful with their teaching. In addition, numerous respondents noted a favorable impression of the online resources.


In Calkins and Deane’s (2010) study, developers conducted two workshops for faculty on grant writing to support efforts in seeking funds from competitive funders such as the NSF and NIH. In addition to expressing satisfaction about the workshops, the post-intervention survey found 10 of the 27 participants were working on or had submitted proposal and were better able to incorporate pedagogical considerations in them.


An analysis of the effects of a Kent State program on teaching students with learning disabilities that involved resources, support, and a week-long institute showed that participants not only rated the program positively, but were able, in subsequent debriefs, to talk about its positive effect on their interactions with students with disabilities. Reflections of five faculty participants detail the ways in which the program influenced their teaching.


As part of a problem-based learning (PBL) core skills program at the University of Southern California School of Dentistry, the PBLs Assessment and Feedback workshop was developed to help faculty understand the role of assessing individual and group performance and how to provide formative feedback within PBL. Between July 2003 and December 2004, a total of 119 participants completed the workshop, which was offered thirteen times. A post-workshop survey using a four-point Likert scale revealed that the majority of participants were satisfied with the delivery and content of the workshop.
Most testified that they had new understanding of how to assess student performance in PBL settings and new strategies for doing so.


Dixon and Scott (2003) reported that “offshore” faculty (faculty from other countries teaching in the Western Australian business school setting of the study) reported gains from a series of workshops. All but one of the 19 participants reported such gains as moving more among their students in class, incorporating examples and other activities to increase relevance, and improving eye contact.


Doherty’s study analyzes the impact of a professional development workshop to assist faculty and staff in using Web 2.0 tools or social media in their teaching. In addition to examining the outcomes of the workshop, the research team also examined the delivery of the workshop, which had three versions. The researcher used multiple measures that included a post-workshop evaluation survey and follow-up surveys. While the post-workshop survey mostly examined participant satisfaction with the workshop, the follow-up interview focused on whether participants put the information received in the workshop into practice. The post-workshop surveys were very positive and suggested that participants were satisfied with the workshop. However, the follow-up interviews showed that few had actually implemented the technology ideas into their teaching. The only exceptions were those who participated in version 3 of the workshop that included a project as part of the workshop.


At a national meeting of the Association of University Radiologists, radiology residents participated in a 90 minute workshop on teaching skills. As part of the evaluation design, 78 participants completed both a pre-course and post-course questionnaire. The pre-workshop questionnaire found that while most of the residents are engaged in teaching medical students (92.3%), only 20% of the residency programs provide formal training in teaching medical students. After the workshop, participants completed a 12-item questionnaire using 5-point Likert scale. The majority of the participants agreed or strongly agreed that the workshop made them feel more confident in teaching and that the workshop was well-constructed.


In an effort to determine the effectiveness of a One Minute Preceptor (OMP) workshop, Eckstrom, Homer, and Bowen (2006) developed and tested a questionnaire to be administered before and after the faculty intervention. In a study of a 66 program participants, results were mixed with faculty
members reporting improvement while residents had no significant improvements in teaching behaviors.


Elzubeir examined the impact of a faculty-led faculty development program that sought to better prepare faculty for teaching problem-based learning (PBL) in the medical school. The content of the workshop series included topical areas such as an overview of PBL and how assessment works in PBL. This particular study by Elzubeir examines the impact of the assessment workshop within the series between 2004 and 2007. Upon the completion of the workshop, each participant (n=150) responded to a questionnaire. Results found that participants were highly satisfied with the session content and logistics. The open-ended questions of the survey suggested that participants had lingering concerns about the implementation of PBL in their teaching.


Fidler, Khakoo, and Miller primarily examined the longitudinal results of the Teaching Scholars Program at West Virginia University. The program, which initially began as a year-long weekly meeting from 8:00 AM to 12:00 noon, was revised over time to a combination of online web courses with one-hour face-to-face meetings. The research team used online post-session surveys (87% return rate) to rate how satisfied each participant was with the session. The average rating of all the classes (4.43) suggests that participant satisfaction was high. Graduates of the program were also mailed a survey that examined how scholars implemented various teaching approaches into their teaching upon completing the program. The results suggested that while participants enjoyed the workshop content there were only “modest gains” in implementation.


Researchers completed classroom observations of 28 faculty as part of a three-year study of teaching. Participants had been active participants in the Oregon Collaborative for Excellence in the Preparation of Teachers (OCEPT), also affiliated with a National Science Foundation professional development program. As designed, the OCEPT workshop is a series on a variety of topics to improve teaching in science and mathematics for a variety of learners. Field notes and an observation instrument were used to evaluate the teaching observations. Findings suggested that many faculty were attempting to implement practices discussed in OCEPT; however, it was unclear if faculty were adequately assessing student learning.

In a one-hour workshop teaching a very specific skill (the one-minute preceptor technique in medical clinical teaching), Furney et al. (2001) found that residents who were taught the technique reported changes in their behavior and appreciation for the strategy on a follow-up survey. Students of the residents showed improvements in their skills and increased motivation to do outside reading, compared with students of control-group residents.


Gjerde, Hla, Kokotailo, and Anderson surveyed the first 100 graduates of a year-long series of five weekend workshops. The focus of the workshop series was preparing both community and university-based physicians to precept medical students. Approximately 80 participants (80% response rate) completed the survey instrument. Having already completed program evaluations that suggested a high-level of satisfaction and efforts to implement new teaching practices, the research team sought to assess level-3 and level-4 outcomes of Kirkpatrick’s model. The authors found that participants listed several outcomes: improvement in teaching skills, improvement in clinical skills, intrapersonal growth and increased self-confidence, and increased interdisciplinary networking and mentoring.


Gjerde, Kokotailo, Olson, and Hla (2004) evaluated the results of weekend institutes for medical faculty featuring 2- to 4-hour sessions on topics including evidence-based medicine, physician leadership, advocacy, doctor-patient communication, quality, technology tools, and teaching skills. They found significant gains in participant’s pre- and post-workshop self-assessments on these skills.


Harwood et al. (2005) followed sixteen faculty from various disciplines through a structured two-year program with a focus on service-learning. The first year of the program was centered around the notion of pedagogy, while the second year sought to encourage scholarly practice. Using triangulated data consisting of questionnaires, meeting transcripts, and faculty portfolios, they found that participating faculty established a reflective community, developed in their scholarship, achieved personal growth, enabled improved student learning, and created a positive campus climate.


Hewson, Copeland, and Fishleder (2001) used results of medical faculty’s pre- and post-program assessments as well as student assessments to document the impact of six two-hour sessions and
follow-up mentoring in a program designed to improve teaching competencies. They found positive correlations between student and faculty ratings and improvement on the competencies.


In this study, undergraduate teaching assistants working in Virginia Tech’s Math Emporium participated in a two-day workshop to learn how to support students using the lab. The workshop effectiveness was assessed by satisfaction surveys of the participants, follow up surveys on the usefulness of the workshop in their practice, and evaluations of the participants’ effectiveness by faculty supervisors and students. No specific findings are offered, although the implication is that the assistants benefit. The article is more about the process of building a support and assessment system for the TAs.


The article describes an intervention in which case studies were used to help faculty prepare for difficult moments in the classroom when student comments promote dissent or discomfort. Participants expressed high satisfaction with the workshop and on a survey conducted four months later, reported increased use of the techniques advocated in the workshop, increased understanding of classroom dynamics, and changes in their overall teaching approaches.


Authors used observation and survey research to conclude that 46 of the 50 participants in workshops on the use of instructional technology increased their use of technology and desire to further develop their teaching with technology.


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Authors report on a series of workshops convened by the Program for the Enhancement of Teaching (PET) at DePaul University’s business school. These focused on media use, teaching with case study method, and general “bright ideas” exchanges. Faculty reported gains in instructional skills on pre-and post-workshop surveys.


Ladden, Peters, Kotch, and Fletcher (2004) reported on a series of two-day workshops for faculty on teaching quality improvement and cost-effectiveness in clinical medicine. They measured changes in
participants’ self-ratings of their growth in knowledge and skill in teaching managing care competencies. Greatest gains were in the area of teaching about quality improvement and cost effectiveness.


In a one-year course on excellence in teaching and career development for geriatric fellows in dentistry, medicine, and psychiatry, fellows completed projects and compiled academic portfolios. Using survey research, the authors found that participants in the course reported improved teaching skills, more frequent intent to follow an academic career, and improved leadership skills.


The St. Lawrence Oral Communication Institute was established to enable faculty to explore the relationship among oral communication, critical thinking, and deep learning with the goal of promoting interactive, reflective student learning. The authors used surveys, observation of participants, and analysis of their work products to conclude that the program had positive effects on faculty learning and understanding.


A four-hour workshop for medical faculty on using more interactive classroom approaches found through surveys and videotapes of participants and a control group of nonparticipants that participants both reported and were observed using more interactive techniques that increased student participation (Nasmith & Steinart, 2001).


The impact of workshops designed to improve the practice of family centered rounds in clinical teaching was assessed using scoring templates before and after the workshops. The templates focused on orientation, feedback, clinical reasoning, assessing physical exam results, and promoting resident leadership. Increased scores on clinical reasoning and orientation were found.


The Digital Academy developed by the University of Texas at El Paso consists of a series of workshops offered in both face-to-face and online formats. Faculty develop and receive feedback on an online
course module, which is the end product of the program. On a participant survey, the authors found that almost all reported that the program helped them to develop and teach hybrid courses and many felt more confident in using technology. Students of the participants responded on a survey that they would recommend hybrid courses to others and take other hybrid courses themselves.


Over 90% of participants in a summer microteaching workshop offered by the Associated Colleges of the South (Persellin & Goodrick, 2010) continued to feel, on a survey conducted from one to 14 years later, that it had impact on their teaching, ranging from helping them to become more thoughtful about their teaching to trying new strategies.


Potts and Schlichting (2011) describe a series of forums offered to education faculty on social justice and culturally-responsive practice. They conclude on the basis of surveys and interviews that faculty reported gains in knowledge and implementation of ideas.


The authors report on a workshop program especially for mid-career faculty using survey and interview results to assess impact. They found that the program inspired new energy, satisfaction, confidence, and enthusiasm for teaching as well as an increase in positive teaching behaviors.


Rust (1998) found positive changes in participants’ attitudes and beliefs following workshops offered by one development center. Having used surveys and telephone interview follow-ups with some former participants who were sampled, he concluded that initial workshop ratings are sound predictors of future change in participants’ teaching.


Participants in an extensive series of workshops for minority faculty in medicine demonstrated substantial increases in their self-assessments of competency and interest in teaching and other roles,
based on pre- post-scores of competence. Further evidence for change came peer review and faculty assessment.


Salerno, Jackson, and O’Malley (2003), who evaluated the effectiveness of a 90-minute workshop focused on improving written feedback for faculty in medicine, found the workshop to be effective in improving short-term skill development in providing written feedback.


In a series of six workshops offered to a small cohort of new faculty each year, the authors used evaluations of workshops and an overall survey to judge participant satisfaction and building of community and campus culture of teaching. A total of 83.7% of the participants rated the program as excellent or very good at achieving these goals.


Developers working with 11 participants from a teacher education program to enhance their technology knowledge and skills found that using an instrument to structure participants’ learning felt that their students learned new skills and increased their interest and confidence in using computers in instruction. They also noted that more students of the faculty chose IT topics for their master’s thesis.


International TAs’ pedagogical training in Science, Mathematics, Engineering and Technology (SMET) workshop programs were studied by Tang and Sandell (2000). Impact was assessed through student evaluation and peer consultation. Authors found that as a result of this intervention, students were more satisfied with the TAs and TAs were satisfied with the mentoring program.


Temple et al. (2003) evaluated a graduate student and TA development orientation workshop and manual using TA surveys. They found that TAs found the manual helpful for lesson planning, active learning tips, grading, and other resources.

Following participation in a series of clinical teaching workshops, dental hygiene faculty completed a web-based qualitative program assessment on significant changes in teaching strategies, barriers encountered following the workshop, and strategies used to surmount the barriers. On the basis of returns from 26 participating departments, the authors found that participants had improved their curricula and teaching practices.


Walstad and Salemi (2011) reported on the Teaching Innovations Program, funded by the National Science Foundation, that consisted of three-day residential workshops on interactive teaching methods. Participants could elect to also complete online modules and engage in scholarship of teaching and learning through presentations or publication. Survey respondents, contacted at least one year following the program, indicated that they had increased their use of interactive teaching and engagement of students in the learning process. Those who elected to participate in the scholarship of teaching and learning activities reported these gains to a significantly higher level, indicating that the combination of approaches was most effective.


A summer program for liberal arts faculty, followed by four sessions during the academic year, was studied by Weld and Trainer (2007), who found through pre- and post-program surveys and analysis of documents produced by participants that the goals of promoting interdisciplinary and student-centered teaching, using technology effectively, and creating a culture of dialogue on teaching were attained.

**Formal Courses in College Teaching and Learning**

Formal courses on teaching offered to faculty members over a term are quite common in the United Kingdom and countries modeled on its system, where faculty who seek promotion are often required to document completion of these courses; in North America, week-long institutes or a sequence of full-day sessions over a period of time are more likely to be the format of choice. In general, research on the use of these extended experiences on teaching usually finds that they influence teacher’s thinking about teaching, but concludes that it is really difficult to document effects on student learning. There are a few exceptions, such as Gibbs and Coffey (2004) below.


Participants in this certificate program enrolled in courses that used Kolb’s Experiential Learning Model (1983) as a framework. Impact was measured using self-report surveys, observations of teaching
practices, document analysis of teaching portfolios, and in depth interviews. Increased self-confidence and self-efficacy, reflection among instructors, and theory to practice application are cited by Donnelly as impacts of enrollment.


Including 22 universities across 8 countries the authors used control and training groups in this study. Training group participants enrolled in varying length courses. This article posits that one can link the impact of academic development to learning since it has been shown that a teacher's approach influences students' learning, therefore, if one can show a change in approach, the impact follows. Impact was measured using student and faculty questionnaires. Authors offer implications of perceived impact over time as a result of the alumni status of participants.


Interviews were conducted with recent graduates of a graduate certificate program in which students took courses designed to teach pedagogical techniques. On the basis of the interviews, the study concluded that many instructors’ conceptions of their role in the classroom were changed as a result of participation in the course. Many also referred to their conception as student focused.


The focus of this study is the Digital Learning Faculty Certificate Program, an online cohort-based series of courses. Assessment of online instruction, teaching effectiveness, and technology tools was conducted using surveys, document analysis, and informal information gathering. A total of 86% of instructors found their experience in the program helpful to their teaching skills.


International teaching assistants were the focus of this faculty development intervention. Classroom and language skills were combined in this teaching course. Participants enrolled in this 3 week course and development was assessed using satisfaction levels via surveys. Findings include satisfaction with the course sessions and increased language skills.


The conceptual frameworks of instructors in this study were assessed using a control group in the study design. Impact was assessed using student ratings of instructor teaching practices. Beyond instructor conceptual framework changes, improvements in students' studying approaches were also reported by instructors in the year following participation.

In this “train the trainer” course instructors learned in an online environment. Participants were assessed through course reflection essays, observations of teaching practice, and reported teaching practices through a survey. Instructors demonstrated a better understanding of student experience and knowledge and comfort using online environments.


Johansson, Skeff, and Stratos (2009) explored the transferability of a teaching improvement course for medical faculty to another context (Sweden), finding through analysis of pre- and post-course ratings that participants indicated significant increases in positive teaching behaviors.


Reflective activities conducted during pedagogical courses are the focus of this study on instructor teaching and pedagogy. Assessment was conducted using participants’ reflective materials derived from course assignments. Reflections were analyzed during meetings with 92 participants. Karm found that professional development, metaphors, and teaching cases, or storytelling were effective tools for promoting instructor reflection.


Participants in a survey conducted by the Johns Hopkins Faculty Development Program in Teaching Skills, a 9-month course of half-day sessions, rated their ability to give feedback, their learner-centered approach, and ability to establish a supportive learning environment significantly higher than nonparticipants over a seven year period (Knight et al., 2005).


Mixed method surveys were used to assess the impact of participant gains from this course aimed to increase teaching skills among faculty. While teaching ability and enjoyment were one measure, professional, personal and interpersonal development all received “moderate” to “a lot of” gains in ratings from participants.


Lewis and Baker (2009) chronicle the evolution of an online master’s degree in education for medical educators. Evaluation of the program includes both qualitative and quantitative measures ranging from
individual course evaluations to an annual survey of program graduates. Findings from the annual survey suggest the program was successful in helping participants achieve outcomes related to knowledge, research and evaluation, and publishing. Measures included conference presentations, publications and funded research.


This course used a sociocultural approach that engaged faculty in thinking about their agency. Researchers analyzed teaching philosophy statements, course assignments, and reflective blogs of 37 participants in two cohorts. Mathieson concluded that faculty developed voice through the project, but that this was dependent on their departmental context. Some were able to align their work with departmental norms and others were not.


A three-day course, with concentration on self-directed learning, teaching skills, personal awareness and interdisciplinary collegiality for medical school faculty was evaluated by Pololi, Clay, Lipkin, Hewson, Kaplan, and Frankel (2001). Through reflection groups and survey data the course was shown to be effective. Instructors reported changes in thinking regarding student centered learning, learner centered learning, and an increase in collegiality. Longitudinal data collection was recommended.


A half semester course for incoming graduate students provided six weeks of discussion, six formative observations, and six peer reviews, culminating in a summative performance evaluation worth 80% of the teaching assistant’s course grade. Results for the formative and summative evaluation and for pre- and post-Efficacy in Teaching instruments were used to document progress made by teaching assistants in aspects of pedagogical content knowledge and confidence.


Sarikaya, Kalaca, Yegen, and Cali (2010), using survey data, studied the effects of a course on student assessment for medical faculty, finding that participants showed greater ability to apply approaches to structured oral examinations, objective structured clinical examination, and the use of structured learning and assessment guides more efficiently than nonparticipating peers.

Shattuck, J., Dubins, B., & Zilberman, D. (2011). Maryland’s online inter-institutional project to train higher education adjunct faculty to teach online. *International Review of Research in Open and Distance Learning, 12*(2), 40-61.
Adjunct faculty were the focus of this online instruction course. Data collection included adjunct faculty participation in surveys and reflective journals. Evaluations were also completed by instructional team members and the course design team. Findings include satisfaction of adjunct faculty and adjunct faculty ability to develop online teaching modules.


Written surveys served as the assessment tool in this study of long-term impact of faculty teaching practices. Results included extended use of course materials for teaching practice even 2 years after course completion. The authors were unable to firmly establish instructor focus on institutional change as a result of this course.


Quantitative pre- and post-tests using control and experiment groups were paired with qualitative interview data to measure the impact of instructional development courses. Results showed differences among types of impact and amount of impact according to disciplines. More sophisticated conceptions of teaching and scholarship were evidenced by participants.

**Communities of Practice**

Communities of practice can be formally designated as faculty learning communities (Cox, 2003) or teaching/learning circles (Erklenz-Watts, Westbay, & Lynd-Balta, 2006) or can simply be general series of project- or dialogue-based meetings. Commitment of time and mutual reinforcement of learning among participants are key features of these interventions. Generally, writers in the literature have found positive effects on teaching development associated with communities of practice. The combination of facilitated peer exchange, sharing of questions and solutions, and task-oriented nature of the regular gatherings are found to advance teaching knowledge and behaviors.


Archambault, Wetzel, Foulger and Williams (2010) found, on the basis of both student and faculty surveys, that through participating in mentored instructional unit redesign projects, teacher education faculty were able to use social networking tools effectively in their courses, became more adept with giving feedback, and used a more student-centered approach than previously.

Black, Ray and Villa (2010) studied a community of practice-like group on reflective teaching that involved monthly meetings and two daylong weekend workshops. Interviews with 22 participants showed that participants made new collegial relationships, changed their teaching methods, improved student learning, and experienced personal growth.


Through an extensive faculty development grants program at the University of Cincinnati, faculty receiving grants for specific individual or collaborative projects reported on an impact survey that they enhanced their pedagogical and research skills, made changes in teaching, improved technology skills, and increased collaboration with other colleagues (Camblin & Steger, 2000). More than half also stated that they shared their knowledge with colleagues, participated in further professional development, or submitted a paper for presentation or publication.


Connelly, Elmer, Morris & Zwickey (2010) studied a program that promoted understanding of evidence based medicine and its incorporation in teaching. The program consisted of a week-long course, monthly group meetings with mentors, and individual meetings. The authors used pre- and post-workshop surveys, and analysis of curricular products to conclude that the program produced knowledge gains and behavioral changes.


Cox has written extensively about a specific type of community of practice, faculty learning communities (FLCs). In this 2001 piece, Cox reports on a study that was based on faculty-reported impacts that range across a range communities. Highest rated components of the programs were 1) colleagueship and learning from other participants, 2) retreats and conferences, 3) projects conducted by the participants, and 4) release time from teaching or professional development funds to take part in the learning community.


In this piece, Cox drew upon survey research to link effects of learning communities to increased engagement in the scholarship of teaching and documented faculty estimates of the changes in student learning brought about by their participation in learning communities. Instructors reported a medium to great degree of increased learning associated with participation in a faculty learning community (topics of learning varied across FLCs).

Erklenz-Watts, Westbay, and Lynd-Balta (2006) explored the concept of faculty learning circles with a group of small liberal arts faculty, finding that participants reported on a survey that their focus had shifted from content to student engagement and learning.


Gusic et al. (2010) focused on the effectiveness of pairing faculty mentors with faculty in the context of projects that involved regular group meetings and discussion. Studying a program that provided release time for faculty to develop projects, the authors used analysis of CVs and products as well as survey and interview data to document knowledge and skill development, formation of collaborative networks, and career advancement of participants. They found that faculty who made the most progress on their projects had the most career productivity.


Hampton, Morrow, Bechtel, and Carroll (2004) assessed a year-long faculty program with multiple components through pre- and post-surveys on instructors’ self-assessment of comfort and skill level with teaching tasks as well as student ratings and statistics on course completion. They also found higher course retention rates and student ratings in courses taught by participants of the program.


Hardy (2010) found through analysis of transcripts of the meetings of a faculty learning community of seven faculty members in education that a deeper understanding of flexible learning emerged and enabled faculty to critique the usefulness of information technologies for student learning and their teaching practice.


Holmgren (2005) evaluated a faculty community of practice program that included a summer program, microteaching, reciprocal class visits, and workshops, using a variety of measures, including pre- and post-program interviews, pre- and post-program student evaluation of teaching ratings, scores of participants’ students on the National Survey of Student Engagement, course retention rates of students, self-reported gains of participants, and other indicators. He found gains on all measures.


Hubball, Collins, and Pratt (2005) found that an eight-month program in which a cohort of faculty members explored their values and assumptions about teaching produced gains in Teaching
Perspectives Inventory scores, indicating that participants reflected more comprehensively on their teaching at the end of the program.


Hubball and Poole (2003) found through analysis of the portfolios and a debriefing meeting as well as a survey of 24 participants in a faculty learning community that participants rated quality of learning in the program as 8.8 on a 10 point scale. They reported developing deeper knowledge of teaching, increased self-confidence and self-knowledge, improvement in pedagogical skills, and appreciation for colleagues.


Sixteen faculty members from different disciplines attending in a community of practice at Berea College explored teaching as a vocation over the course of seven sessions. Through an analysis of the reflective writing of the participants, the authors found that participants reported experiencing increased empathy and patience, deeper engagement with their work, a stronger sense of community, and encouragement to meet the challenges of being educators.


Adjunct instructors participating in a series of dialogue meetings about inclusive teaching showed improved articulation of diversity goals, increased awareness of the importance of inclusive approaches, and changes in course teaching and assignments (Keehn & Martinez, 2006). The authors used interviews, student surveys, and analysis of syllabi to draw their conclusions.


Light and Calkins (2008) conducted pre- and post-activity interviews of 22 faculty participating in workshops, project group meetings and a two-day retreat over the course of an academic year, finding that 14 participants became more student-centered in their conceptions and approaches while eight did not change substantially (although three of the eight were already at the highest level measured).


Light, Calkins, Luna, and Drane (2009) described a program in which participants attend monthly workshops, three project group meetings, additional workshops and individual consultations. Their study used a mixed method approach involving the use of the Approaches to Teaching instrument pre- and post-treatment with a control and experimental group, analysis of participants’ reports, and in-depth interviews. They documented positive change in approaches to teaching, specifically noting more student-focused approaches.

Martimianakis, Hodges, and Wasylenki (2009) conducted participant observation, surveys, focus groups, and analyzed participant diaries to determine the impact of a year-long series of dialogues on teaching between clinical educators and scientists in psychiatry. The result was the identification of structural barriers that prevented collaboration and understanding; new directions for change were identified to improve teaching culture and support in the unit.


Reporting on a development activity incorporating action research projects by graduate teaching assistants in second language teacher education, McDonough (2006) found that participants showed increased research expertise and interest in collaboration and employed new teaching practices. She used analysis of their journals, essays, research reports, and oral and written feedback from the participants to form her conclusions.


In one variation on a community of practice, course revision teams at Valencia Community College, supported by small stipends and workshops, seminars, and online discussions implemented curricular changes that resulted in increased student performance pass rates and retention. Participants reported using new practices such as developmental advising and inclusive pedagogy as a result of their involvement. Researchers analyzed comparative course grades and retention rates for courses taught by participants and non-participants as well as two surveys of faculty to produce the findings.


Nugent, Reardon, Smith, Rhodes, Zander, and Carter (2008), working from reflections of participants, found that members of a faculty learning community devoted to exploring the use of instructional technology provided testimony to the changes in conceptualization and practice that they experienced. The authors also argued that the intervention had effects at the campus-level through the conducting of a student survey and implementation of additional faculty learning communities.


O’Meara (2005) collected pre-, during- and post-program self-ratings, interviewed faculty, and observed meetings of a program for early-career science and technology faculty that spanned an academic year in which participants attended 16 dinner seminars and completed a course redesign project. She found gains in the impact of the program on teaching careers (commitment, satisfaction, teaching skills), on participants’ understanding of how students learn, and on their understanding and
use of assessment. She concluded that the project component of the program was crucial for participants’ self-knowledge and their understanding of how their actions influenced student learning.


Combining self-report surveys with observations, analysis of teaching materials, and in-depth interviews with a small subsample, Polich (2008) found that although 87% of the 39 participants in a faculty learning community program reported changing their epistemological beliefs about teaching, none of the seven she studied more intensely showed evidence of this change. All those observed, however, had changed their teaching practices, in line with the reported 79% response on the survey. She found that adoption of the new practices was contingent on alignment with beliefs.


Qualters (2009) evaluated a sustained program called Dialogues that engaged 31 participants at two institutions in examining their assumptions about teaching together. Through analysis of transcripts and notes of meetings and participant survey results, she concluded that participants were better able to think about the assumptions behind their practice and made plans for or enacted change in their teaching.


Postgraduate researchers participating in action research projects in a learning community on teaching increased their knowledge and skills, as shown through the results of interviews following the program (Regan & Besemer, 2009).


The authors wrote about their participation in a faculty learning community designed to explore web-based applications in teaching. The program involved mini-grants, a three-day workshop, and a series of meetings throughout an academic year. Participant reports show that they were able to produce rubrics for student assessment and create a culture of assessment.


Schroeder (2005) used products of faculty scholarship to document “transformational learning” of the participants. Their ability to articulate assumptions, reflect critically, and take action to implement new practices was associated with participation in the program, which
involved seminars, independent inquiry, an $8,000 stipend for release time or employment of an assistant, and travel to a conference.


Shih and Sorcinelli (2007) reported results from a program for senior faculty enhancing their use of technology through extended course development projects that included a summer retreat, interactions with a consultant, and biweekly seminars over the course of an academic year. From a survey completed by 40 participants and analysis of participant reports and digital portfolios and student feedback on the courses, they documented gains in participant willingness to experiment, knowledge of teaching technologies, understanding of how students learn, and student learning gains.


In this study, the authors reported on a project-based development program to assist teacher education faculty in adopting instructional technology through the use of a planning tool. They found, on the basis of observations by the coaches and scores on student evaluations, that participants gained skills and knowledge, were making applications of the technology, and that students agreed that they learned new models for using technology. In addition, the number of participants’ students who chose instructional technology for their thesis topics increased.


Warhurst (2006) found that the social meaning-making of a cohort of new teachers in a faculty learning community was at the heart of their growing identity transformation as teachers. He also explored the importance of the concept of “situated learning,” arguing that development best takes place within communities of practice. The findings were based on interviews and analysis of faculty reflections.


Waterman et al. (2010) reported on a community of practice that used action research to explore the effect of new teaching approaches on student learning. The ten faculty fellows met monthly to design and execute action research projects. In addition to documenting positive effects on student learning through interviews and analysis of research documents, the study reported that 15 projects were presented at conferences and seven were published in peer review journals at the time of publication of the study.

**Mentoring**

Although there is a considerable literature base about mentoring in general, we found only five studies of educational development devoted solely to the impact of mentoring. Three of these centered on increasing technological skills through mentoring by a more experienced colleague. Across the studies,
authors found that successful mentoring programs are those in which mentees had flexibility in shaping both the topics and ways in which they interacted with mentors. They often cited reciprocal benefits for mentor and those mentored, which involved increased confidence, improvements in specific targeted teaching skills, and richer conceptualization of learning.


The authors of this study sought to better understand the developing relationship between mentors and mentees in a three year faculty mentoring program. An evolving focus group design was used to gather information; transcripts were coded and member checks were also completed. The authors found that mentees broadened their relationships with other mentors and peers as the mentor relationships continued in years 2 and 3. They also found that mentees benefitted from both supportive and challenging behaviors from mentors.


A four stage mentoring model for faculty and online instruction titled *Distance Education Mentoring Program* is the focus of this study. The program focuses on the instructor, student achievement and ‘competitive advantage’ of online education. Outcomes included benefits for mentors, protégés and the university, such as increased student achievement, and increased enrollment in online courses.


Authors assessed the impact of a mentoring program for Graduate Teaching Assistants. This program included small groups of graduate students meeting with a faculty mentor regularly to discuss and learn about teaching strategies and skills. Impact was measured using a year-end assessment tool, student evaluations of the program, and student teaching statements pre and post program components. Authors found the program to be supportive of GTAs needs and helpful in developing their teaching skills. Their assessment also found GTAs had higher self confidence in classroom instruction.


Miller and Thurston (2009) studied the impact of a new faculty mentoring program over the course of nine years of operation through formative annual surveys, summative surveys at the fifth and ninth year, and interviews with administrators. The survey respondent group of 29 mentors and 23 mentees found that 55% of the respondents said that the program aided their transition, while 27% said that the program influenced their teaching and research, and 34% said that the mentoring influenced their ability to publish and present their research.

Silva, Correia and Pardo-Ballester (2010) assessed the impact of a mentoring program for faculty learning how to use Second Life, a virtual world experience. Both graduate students and faculty members enrolled in a graduate level course designed to teach instructional skills in Second Life. Graduate students served as mentors to faculty members. The graduate student mentor met with mentees once a week in one hour meetings. Implications were two-fold. Impact data were collected through mentor blogs, observations, and interviews with both mentors and mentees. Findings included the benefits of modeling behavior in online instruction and mentee and mentor benefits both short and long-term.

Consultation

In general, studies of the effects of consultation suggest that talking with an expert or a knowledgeable peer about a particular teaching context is associated with changes in teaching knowledge and behaviors, when the consultation is done skillfully. The literature supports the case that consultants who establish a consulting relationship with faculty members are likely to be able to support their transition to successful implementation of teaching change.


Adams, Rust, and Brindhaupt (2011) found that 52 faculty who were engaged in online course development paired with a mentor (peer assistant) reported on a survey that the process improved the courses they were developing. Department chairs and peer assistants involved in the consultations said that they learned in the process as well.


Atkinson and Bolt (2010) reported that a peer observation and consultation project resulted in positive gains in teaching improvement, especially in the use of interactive teaching, for the ten participating faculty. They used written evaluations to collect reports on the influence of the program and the effectiveness of its format.


Bell and Mladenovic (2008) found that peer observers were able to help faculty improve their recognition of strengths and weaknesses and develop motivation to make changes. They used results of the observations, a survey, and focus group data to evaluate the effectiveness of the program.

Bell found that 28 participants in the peer observation and feedback component of a required course on teaching for faculty reported that they were able to make changes in their teaching, developed confidence and collegiality, and became more committed to continuing professional development. Results were obtained through analysis of written accounts of each of four feedback sessions and a final report.

Finn, Chiappa, Puig, and Hunt (2011) documented the effects of a program that implemented a collaborative peer observation process in a medical clinical environment. They found that participating faculty increased their reflection on practice and incorporated new teaching techniques.


In the context of a chemistry department in the Philippines, Gallos, Berg, and Tregust (2005) found that coaching by an expert instructor helped the 15 instructors to incorporate active learning approaches into their instructional design. The authors used observations, videotape analysis, records of meetings, and student interviews to document the changes from pre-test to post-test.


In their study of a teaching observation program in which educational consultants offered faculty feedback on their teaching, Hatzinpanagos and Lygo-Baker (2006) found that participants reported gains in understanding teaching and learning and implementing change as a result of the voluntary process used.


Howland and Wiedman (2004) analyzed the results of pre- and post-program self-assessments of gains made by 21 teacher education faculty participating in a program involving individualized consultation on the use of instructional technology. They also used interview data and student reports of their instructors’ technology use to document positive gains in teaching comfort with and effective use of instructional technology.


Although studies of the beneficial effects of consultation and feedback have focused primarily on discussions of student ratings, some literature on consultation in general also documents resulting changes. McShannon and Hynes (2005) reported on a semester-long program for engineering and science faculty that involved weekly classroom observations and discussions with a consultant. Their results are based on 62 faculty who participated during one semester over five years of the program. In addition to finding that the faculty reported greater use of active learning methods and increases in student learning, the authors found small increases in the number of students receiving grades of A, B, and C, as well as gains in the numbers of students remaining in science and technology programs.


Piccinin (1999) and Piccinin and Moore (2002) analyzed results of student evaluation, finding that instructional consultation helped improve the student ratings of younger faculty within a year and older faculty within one to three years. Their findings echo traditional results of consultation with feedback meta-analyses.


A more recent update to student rating and consultation studies was done by Rindermann, Kohler, and Meisenberg (2007), in which 16 instructors at a German institution were given consultation on their student evaluations of teaching between two courses, months apart. Results showed that teachers, especially those with lower initial evaluations, improved substantially following consultation that helped them to determine specific ways in which they could make improvements.

**Awards and Grant Programs**


Chism (2006) analyzed 144 existing awards programs associated representing 85 institutions across 33 states in the United States. In an analysis of university documents, each award was coded according to the criteria and evidence used in the program. Chism found that very few had established criteria or systematic review processes.


In a review of the literature on teaching awards, Chism and Szabo (1997) discuss the growing popularity in teaching awards and the reasons often given for implementing such programs. In addition, the authors through their review of empirical studies document the mixed results of using teaching awards. For example, they were not able to locate studies documenting that awards either prompted award recipients to further their own growth or encouraged others to make improvements in order to gain the awards.


When grants are combined with other elements such as instructional coaching and course releases, studies have shown an impact on faculty change and teaching practices. For example, between 2002 and 2006, an Australian university provided over $210,000 in grant funding to support 34 projects in STEM-related fields. The competitive grants were part of the university’s Action Research in Teaching and Learning (ARTL) initiative open to all faculty and staff involved in teaching. In addition to funding, each project received various support such as mentoring and professional development. Gray, Chang,
and Radloff (2007) found in a formal evaluation completed by 12 participants that the grant program had improved their teaching.


Morris and Fry's (2006) study of a small grants program tied to the scholarship of teaching and learning found that recipients reported growth in their understandings of practice. Project reports, success rates and feedback from grant-holders served as the tool for data collection. They cited the opportunity to reflect and develop new teaching skills and expertise, their development of partnerships, and interactions with peers on teaching and learning issues were most beneficial. In this case, the experiential learning of having to do research on practice was important in promoting growth, perhaps more than the grant itself.


As part of a single institutional study, Peterson examined faculty vitality within a community college context. Using a qualitative process, Peterson (2005) found “ambivalent attitudes, even hostility and anger, toward the formalized nomination process for awards as well as the way in which awards are disseminated” (p. 157).


Sarnoff, Welch, Gradin, and Sandell (2004) studied a sustained faculty-in-residence program that provided a course release grant to each participant, enabling them to focus on various forms of active learning to increase students’ critical thinking and writing skills. Although they report data on only two participants, they conclude that course assignment, test scores, and student feedback indicated gains in students’ use of the active learning methods. Faculty reported being more engaged in teaching and knowledgeable about methods. The faculty published their work in both general and disciplinary journals.


In a grant program supporting post-tenure faculty, Sorcinelli, Shih, Ouellett, and Stewart (2007) surveyed faculty over 5 years who participated in a program that gave grants to post-tenure faculty upon a mandated 7-year review. Sixty-five (66%) of the surveys were returned. Faculty reported changes in teaching practice, cited evidence of improved student learning, use of mid-course assessments, realization of benefits of review process. Faculty rated the success of their grants project, with 76% rating it as excellent or outstanding.
Structural Changes

Changes in the context of teaching, either through teaching in a different location or teaching environment, have also been studied for their effect on development. Although educational developers are not generally able to influence teaching assignments, the implications of studies of structural changes on teaching support the expectation that they can have generative results. Through interrupting the usual and taking the teacher and students into another environment, structural changes can promote reflection and development in ways similar to the novel experiences discussed in the literature.


Mid-career faculty who taught in student learning communities reported increased vitality as a result of their participation in this new kind of teaching in their careers. The authors used interviews, observations, and document analysis to arrive at their conclusions (Ellertson & Schuh, 2007).


A study on the use of mid-course student evaluation by 105 faculty at Brigham Young University found that faculty who read their evaluations, discussed them with students, and implemented changes improved 9% on their final evaluation of teaching for the course. Lower, but positive, effects were found for faculty who did some of these tasks. The authors used interviews and student surveys to document their findings (McGowan & Osguthorpe, 2010).


McHenry, Martin, Castaldo, and Ziegenfuss (2010) report on a program in which faculty, assisted by developers, coached student learning assistants in course design, student learning, and pedagogy in the process of course redesign. The authors found, through interviews and analysis of course materials, that through the introduction of learning assistants, both faculty and students gained knowledge of course design strategies and teaching methods, a broadening of conceptions of teaching and learning, and the development of a culture of academic collaboration.


In her analysis of several studies on transnational teaching, Smith found that such experiences force teachers to reflect on their content, process, and premises, which opens up the possibility of transformation of perspective. She recommended that educational development units help teachers to interrogate their practice in situations of context change so that they reflect deeply. Smith cited past literature in arguing that changes in context can be most powerful for more senior faculty members who normally resist teaching development interventions because the interruption of the usual creates the stimulus to seek or accept guidance.

Through involving three teaching assistants in Spanish in collaborative teaching and reflection assisted by a coach, Stepp-Greany analyzed participants’ journals and her own notes to conclude that the participants improved their teaching strategies such as the use of rubrics and physical classroom space, appreciated their colleagues, and became more proficient in resolving classroom issues.