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Stein, SM, Fujisaki, BS, Davis, SE. (2011). What Does Effective Teaching Look Like? Profession-Centric Perceptions of Effective Teaching in Pharmacy and Nursing Education. *Health, Interprofessional Practice & Education* 1(1):eP1003.
Available at: <https://doi.org/10.7772/2159-1253.1007>

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HIPE is a journal published by Pacific University | ISSN 2641-1148

What Does Effective Teaching Look Like? Profession-Centric Perceptions of Effective Teaching in Pharmacy and Nursing Education

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Abstract

INTRODUCTION Much of the published literature surrounding teaching effectiveness is based on student perspectives. Explicit standards for what constitutes effective teaching in health professions education do not currently exist. Best practices for training and evaluation in teaching effectiveness could be better addressed with detail from expert-based sources.

OBJECTIVE This study sought to identify elements of effective teaching by gathering perceptions of exemplary educators. In addition, profession-centric differences in perceptions of effective teaching were also evaluated.

METHODS An iterative consensus-building method was used to gather the perceptions of nursing and pharmacy educators regarding effective teaching. Individual semi-structured interviews were initially used to gather example items within four pre-defined categories: effective methods, ineffective methods, active learning methods, and effective traits. These example items were then collated into an electronic survey that was then administered to the same participants to be rated on a numerical scale.

RESULTS Ten educators from nursing and pharmacy participated in this study. Based on the participants' rankings of the collated lists, a high level of consensus was observed for many items in each of the four categories. With other items, wide variability in ratings was also seen. Further analysis by discipline subgroups revealed patterns of item ranking that appear to be profession-centric.

CONCLUSION Exemplary nursing and pharmacy educators revealed consensus regarding perceptions of certain elements of effective teaching. The results also suggested some elements where profession-centric perceptions exist. These results could be incorporated into best practices for effective teaching training and interprofessional teaching design.

Received: 05/26/2011 Accepted: 08/26/2011 Published: 09/23/2011

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Implications for Interprofessional Practice

- Different professions have similar perceptions of effective teaching in some areas; these similarities should be used to develop initial best practices for teaching training and interprofessional teaching design
- Profession-centric perceptions should be identified and incorporated into interprofessional curriculum to proactively embrace commonality and celebrate differences
- Interprofessional educational efforts may benefit from providing ‘professional cultural competence’ training for students and faculty

Introduction

Academe has a responsibility to provide students with effective educators. In health professions education, if the process is ineffective, student learning is compromised and society may not be provided with quality professionals. A positive correlation between effective teachers’ skills and student learning has been shown in academic performance and student outcomes in elementary and higher education (Goldhaber & Anthony, 2007; Trautmann, 2008). Specifically, researchers have found that “teacher quality is a significant, if not dominant, variable in achievement outcomes” in referring to overall student performance (Ganley, Quintanar & Loop, 2007). Effective teaching has also been positively correlated with student performance within health professions education (Cooke, Irby, Sullivan & Ludmerer, 2006; Hickok, 2006; McDonough & Bennett, 2006; Whitcomb, 2007). Although accreditation bodies for health professions education have standards that call for quality educators to deliver the curricula, these groups, such as the Accreditation Council for Pharmacy Education and the Commission on Collegiate Nursing Education, do not provide specific guidance on how to determine educator quality and/or teaching effectiveness. This leaves many educators and administrators in these fields wondering: *What does effective teaching look like?*

Characteristics of effective teachers have proved challenging to clearly identify. Anecdotally, a common answer when asked to describe a skilled educator is: “You know a good teacher when you see one.” Many studies have explored students’ perspectives of effective teaching (Jones, 2008; Lohman, 1996; Ramsden, 1992; Singh

& Stoloff, 2007; Song, 2006; Walker, 2008). Students have endorsed descriptors such as “excitement” and “passion” as frequently as “knowledge” and “skill” when describing memorable teachers. The value of student evaluations in identifying effective teachers has been conflicting (Davidovitch & Soen, 2006; Edstrom, 2008; Marsh, 2007). Student evaluations have often been the standard for identification of good teachers or effective traits, however many question whether students are qualified to provide valuable subjective input (Barnes, 1985; Marsh, 2007; Solem & Foote, 2006).

Characteristics of effective teaching have not been extensively studied from the educator’s perspective. However, a consistent finding from the available literature is that excellence in teaching includes knowledge as well as disposition of the educator (Jones, 2008; Lohman, 1996; Walker, 2008). Moreover, effective educators have mastered skills such as thorough comprehension in the field of study, understanding of the learning process and teaching techniques (Davidovitch & Soen, 2006; Ramsden, 1992). This leads to the next question: *Does effective teaching look the same in different fields of study?*

Bain (2004) completed a longitudinal study to identify the shared characteristics of effective teachers across multiple disciplines in higher education by compiling over 15 years’ worth of student interviews and surveys. Some tenets of effective teachers mirrored other findings such as knowledge in subject area, preparation and organization, and treating students with “simple decency” regardless of the discipline (Bain, 2004, p. 18). Bain also

uncovered additional commonalities of effective teaching such as approaching teaching as a serious responsibility, providing methodical and systematic assessments, expecting “more” from students routinely, and creating a “natural critical learning environment” (Bain, 2004, p. 18). Literature searches in health professions education revealed a paucity of publications focused on across-discipline or even discipline-specific evaluations of teaching effectiveness. For the most part, the literature that is available has been limited to discipline-specific perspectives of effective teaching within medical and dental education (Snell et al, 2000).

The purpose of this study was to identify elements of effective teaching methods and traits using a panel of exemplary educators from nursing and pharmacy education. A secondary objective was to evaluate potential profession-centric differences in perceptions of effective teaching. These results could be used in the development of effective teaching best practices for future training and evaluation of health professions educators. Profession-centric differences could be particularly informative for interprofessional education curricula that utilize team teaching approaches with an interdisciplinary faculty.

Design

This study utilized a consensus method to capture the perceptions of contemporary nursing and pharmacy educators to characterize effective teaching. Interviews were conducted using a modified Delphi method to identify elements within four categories: (1) effective teaching methods, (2) ineffective teaching methods, (3) active learning techniques, and (4) effective teaching traits. The modified Delphi method provided an opportunity to gather expert opinions from diverse geographic areas and, through the process of rating, reach consensus (Turoff & Hiltz, 1995). The modified Delphi method begins with open-ended submissions from the expert panel and, through a series of iterative cycles, identifies consensus (Custer, Scarcella & Stewart, 1999). In this study, two cycles were completed.

Exemplary educators in nursing and pharmacy education were identified to participate in the interviews. Nursing and pharmacy were selected to represent two disciplines of health professions educators. Exemplary educators were identified using recommendations from professional organizations, published literature, and

academic administrators. Criteria included more than three years teaching experience, currently teaching in professional programs, and public recognition of teaching expertise. A random sample of 10 exemplary educators was invited from the field of candidates to participate in the panel. Participation involved one telephone interview followed by an email and second telephone communication over a period of two to three weeks.

Semi-structured telephone interviews were conducted with individuals, independent of other participants. Telephonic communication was used to increase participation and allow descriptive responses. Interviews were completed using an investigator-developed Exemplary Educators Interview Survey (Appendix 1) that gathered participant demographics and perceptions of teaching methods and traits surrounding the aforementioned four categories. The interview questions were developed using a combination of published research (Davidovitch & Soen, 2006), training texts, and input from academic colleagues. The first phase of telephone interviews occurred at a prescheduled time with an expected duration of 45 minutes. The information obtained from the first phase of interviews was collated into the four major categories: effective teaching methods, ineffective teaching methods, active learning techniques, and traits of effective educators. When possible, each collated category list was condensed for duplicative statements. This condensed list (Appendix 2) was then emailed to the same participants that were interviewed in the first cycle. The second cycle of the modified Delphi process then had the same participants independently rate the collated list of items based on their personal perception and then return the completed ratings to the investigator. Interviewees rated the collated statements in the four categories, using a ten-point scale (1 to 10) with three narrative anchors: 1 = Strongly Agree, 5 = Neutral, and 10 = Strongly Disagree. The investigator subsequently contacted interviewees and completed a short telephone interview to clarify incomplete responses. Educators were instructed by the investigators to predicate their ratings based on their experience and observation in generalizations. All participants provided informed consent and the Institutional Review Boards of Pacific University, Washington State University, and A.T. Still University approved this study.

Results

Ten exemplary educators participated in all phases of the study. Educators from nine states comprised the panel (Alabama, Illinois, Missouri, Nebraska, Ohio, Oklahoma, Oregon, Utah, and Wisconsin). Demographic information is presented in Table 1. Four panelists were nursing educators (40%) and six were pharmacy educators (60%), seven (70%) were female and three (30%) were male. The average age of panelists was 57 years old; range of 44 to 65. The majority of educators had earned Ph.D.s (90%) and one was in the process of completing her dissertation. Teaching recognition ranged from

internal Teacher of the Year awards to national organization Innovation in Teaching awards. All participants were currently teaching within professional programs with teaching experience averaging 21 years and a range of 19 to 39 years. The educators' academic ranks spanned professor to assistant professor. Only 30% had experience as a clinician. The six (60%) pharmacy educators' training ranged from basic science specialty (medicinal chemistry, pharmacology/toxicology, and pharmaceuticals) to pharmacy to social and behavioral science. The four (40%) nursing educators' training ranged from maternal childcare to nursing midwifery to educational and instructional design.

Table 1

Interviewee Demographics

Demographic		Findings	
Practice	Nursing	<i>n</i> = 4	40%
	Pharmacy	<i>n</i> = 6	60%
Gender	Male	<i>n</i> = 3	30%
	Female	<i>n</i> = 7	70%
Age (years)		<i>M</i> = 56	Range 44 – 65
Academic Rank	Professor	<i>n</i> = 4	40%
	Dean, Professor	<i>n</i> = 3	30%
	Associate Professor	<i>n</i> = 2	20 %
	Assistant Professor	<i>n</i> = 1	10%
Highest Degree Earned	Ph.D.	<i>n</i> = 9	90 %
	Ph.D. ABD	<i>n</i> = 1	10%
Years Teaching	19 – 39	<i>M</i> = 27	Range 19 – 39
Average Class Size		115	Range 35 – 200
University Setting	Public	<i>n</i> = 7	70 %
	Private	<i>n</i> = 3	30 %
Received Teaching Awards		<i>n</i> = 9	90 %
Received Graduate Teaching Training		<i>n</i> = 5	50 %
Received Post-Graduate Teaching Training		<i>n</i> = 9	90 %
Clinical Degree/Training		<i>n</i> = 7	70%
Practiced in a Clinical Environment		<i>n</i> = 3	30%

The investigators analyzed responses provided by the participants during the first cycle to identify those that were similar or identical. As each participant was asked to provide three examples for each of the four categories, 30 discrete responses for each category were possible. This initial analysis resulted in a condensed list of responses in each category: Effective Teaching, 25 items; Ineffective Teaching, 23 items; Active Learning Methods, 25 items; Traits of Effective Teachers, 23 items. Appendix 2 lists the specific items in each of the four categories.

The overall and discipline-specific results from participants' ratings in the second cycle are shown in aggregate (median and ranges) in Figure 1 (following page). In the overall results, participants were least variable in their ratings for examples of Traits of Effective Teachers, with median ratings for the individual examples ranging from 1.0 to 2.0 (Item Ranges: 0-2). Variability in the other categories was much greater: Effective Teaching Methods, (Median scores ranging from 1.0 to 4.0; Item Ranges: 1-5); Ineffective Teaching Methods (Median scores ranging from 1.0 to 3.5; Item Ranges: 1-8); and Effective Active Learning Methods, (Median scores ranging from 1.0 to 3.0; Item Ranges: 2-7).

Effective Teaching Methodology items for which there was a high level of consensus (i.e., a range of 1 or less for the individual item) included active engagement with students in class, displaying problem solving and decision-making, showing respect for students, and modeling professional behavior. Within the Ineffective Teaching Methodology statements, a high level of consensus was found (i.e., a range of 1 or less for the individual item) for arrogance and lack of availability to students, showing a lack of civility toward students, and displaying a lack of caring if students learn. Active Learning items that were found to have a high level of consensus included the use of facilitated discussions, case studies, and critical thinking exercises with evaluation and feedback. Active learning techniques wherein there was greater variability in ratings as to their effectiveness included computerized case studies and videotapes or web links to stimulate active learning. Less variability was noted for Effective Teaching Traits. Statements such as approachable, compassionate, and organized appeared to reflect personality styles of the educator. Other traits, however, such as openness to other opinions and encouragement of student thinking are more reflective of

progression to student-centric modes of teaching methodology.

When evaluating the results by discipline subgroups, nursing educators provided identical ratings for 8 (33%) of the Effective Methods, 6 (25%) of the Ineffective Methods, 2 (8%) of the Active Learning techniques, and 17 (80%) of the Effective Traits. Pharmacy educators, however, did not demonstrate identical ratings for any of the Effective Methods, Ineffective Methods, or Active Learning items and held identical ratings for only 1 (4%) of the Effective Traits. Median scores and response ranges for these items (both overall and by discipline) are presented in Figure 1 with details of each numbered item corresponding to that listed in Appendix 2.

Discussion

This study revealed that perceptions of teaching efficacy among exemplary educators are broad and diverse yet common themes were also apparent. Each interviewee was enthusiastic to participate in this study, which may be reflective of their interest as exemplary educators. While different perceptions of effective teaching were collected, once the examples were listed, the exemplary educators reached a high level of consensus in many areas. Nursing educators appeared to show higher consensus than pharmacy educators in discipline subgroup analysis.

The demographic data showed the propensity of these educators to seek teaching training after graduate education was completed, perhaps explaining their mastery of teaching. Almost one-third (30%) of the participants had moved into administrative roles as Deans, which may increase the attention to teaching effectiveness in those programs. As expected, interviewees were older, taught longer, and had advanced degrees. Similar characteristics were noted in Bain's (2004) analysis of effective college teachers.

While teaching awards currently exist, it was unfortunate more metrics were not available to identify exemplary educators. The challenges experienced in identifying and recruiting exemplary nursing faculty in particular were unexpected. Lack of recognition or perceived value of such may have been related to recruitment challenges. Nursing educators in the cohort received fewer national teaching recognitions than pharmacy educators, possibly indicative of the educational culture rather than re-

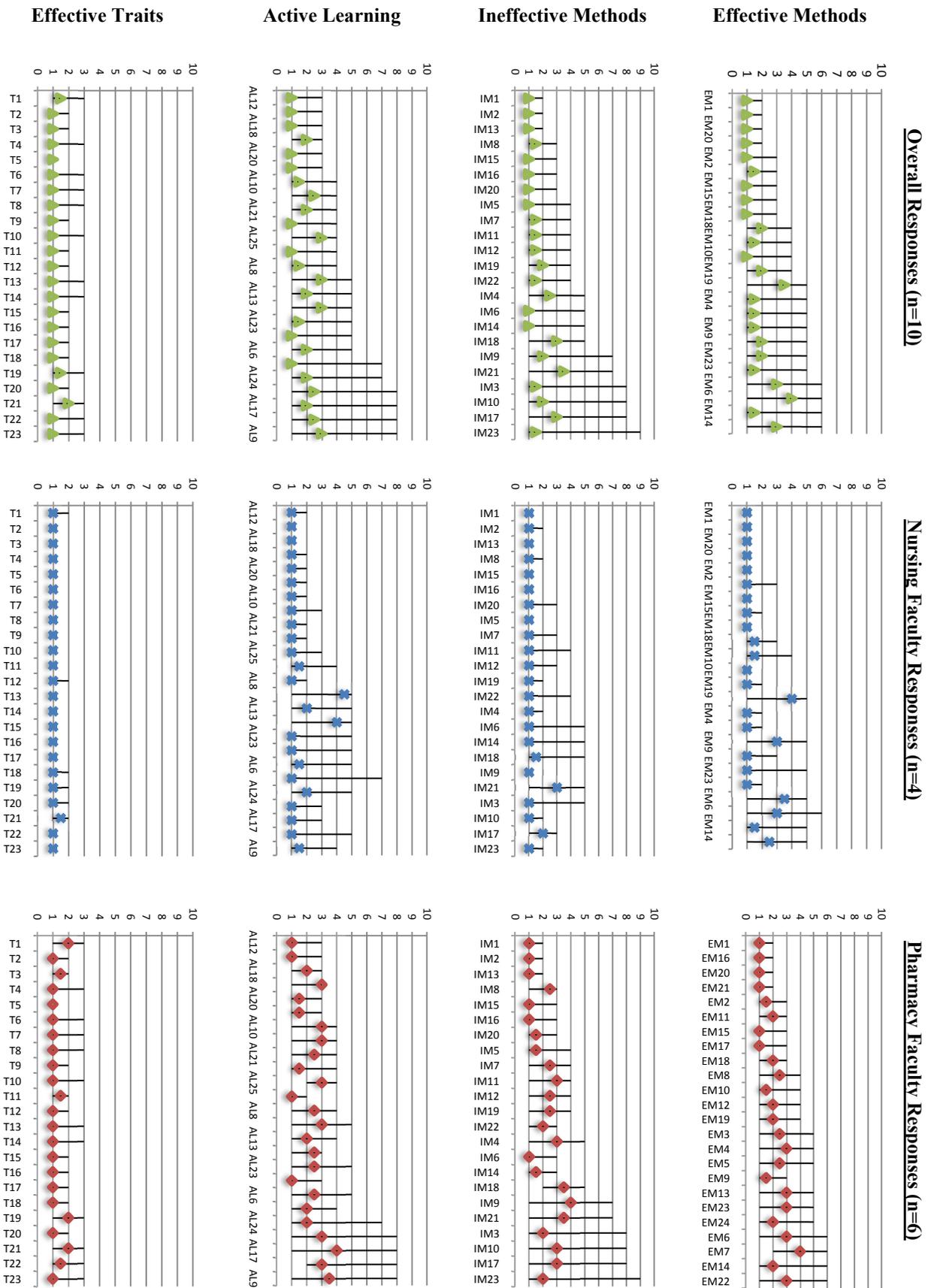


Figure 1

Effective Teaching Survey Results

Shapes represent median ratings while lines represent the range. Appendix 2 lists the corresponding details for the numbered methods and traits on the axes.

flective of the individual's performance: if recognition is not provided, effective nursing educators may not seek participation in a study of this nature. Further research in this area may be warranted.

The first cycle of open-ended submissions produced a plethora of useful examples. The investigators expected more commonality in the distinct statements yet were delighted with the variation of responses. Interviewees emphasized there were exceptions to some examples provided, supporting the concept of individuality and innovation in teaching. The interviewees also found "it is easier to describe what not to do" when trying to describe an example of an effective teaching method. The premise of identifying elements of effective teaching methods and traits using a panel of exemplary educators from nursing and pharmacy education was met with great support whereas previous studies used student perspectives (Singh & Stoloff, 2007; Song, 2006). This attitude may be reflective of individuals who display a passion for teaching.

Although active learning is not a new concept, the number and creative nature of the examples provided by the educators were refreshing. One educator described the use of a specific publication revisited throughout the semester as a tool for understanding and applying statistics allowing students to learn application in tandem with critical thinking while contributing to a current topic. Other examples, such as integrated practice laboratories, have been embraced but the educators emphasized the application of coaching and facilitation as much more effective than lecturing or directing. Most educators commented on the variability of activity success with the preparation and engagement of the educator. One educator recommended applying active learning sparingly: "Use it for burning questions and high-level concepts but be selective: keep them wanting more."

This study was able to identify components of effective teaching methodology with a small cohort representing two health professions educators. The components of effective teaching that reflected high consensus, such as active engagement, problem solving, respectful, and open-minded, were similar to published studies (Bain, 2004; Singh & Stoloff, 2007) and could be incorporated into best practices for training and evaluation. It may appear these are obvious statements yet universally recognized best practices do not currently exist (Jones, 2008). Future studies may continue to accrue more insight by

including other health professions and more participants.

Difference in rating variances observed between the two professions may be reflective of cultural differences that influence the perception of what is considered effective teaching within the given profession. The idea that learning cannot be separated from the culture within which one gains a skill or set of skills is not new. Lev Vygotsky, a Russian-born developmentalist, details how our social environment shapes thought in that the cultural relevance of information is transmitted to the learner along with the information itself (Vygotsky, 1978). Within the health care arena, professional culture has been identified as a potential barrier to successful interprofessional teamwork surrounding patient care, though these may extend to possibly also include curricular design and teaching efforts (Hall, 2005).

It is, therefore, possible that the culture of nursing profession is one wherein there is a strict protocol for not just what information is to be presented, but how learning is to be presented. If the culture of nursing is one in which deviation from the norm is not as highly regarded as in other professions (i.e., awards in recognition of innovation in teaching), the implicit message might exist that teaching effectiveness does not deviate from established cultural tradition. The perception of effective instruction is, in effect, inherently standardized. More importantly is that this is just a single example to possibly explain the complexity of the larger concept of professional culture and ultimately how it could impact even the early teaching and learning that occurs in interprofessional health care education. This would support the idea that interprofessional educational efforts should include "professional' culture competency" training for students and faculty alike (Hamilton, 2011).

In that effective instruction is inherently entangled with the transmission of cultural norms and values, one would expect a developmental trajectory wherein individuals more acculturated to a given profession would differently interpret teaching effectiveness. Basically, those individuals who are either farther along in their training or are currently active members of the professional community will interpret teaching effectiveness in terms of the values of their professional culture. Those individuals, on the other hand, who are early in their professional training, will base their assessment of teaching effectiveness at the level of the individual rather than as an expres-

sion of the profession; they will base their assessment on a host of interpersonal and stylistic variables that, while important, are not reflective of the norms of the profession. These questions have not been addressed in the literature and future studies would be needed to determine if one would see different ratings of effectiveness. There are some limitations to this study. The size and composition of the sample in this study should be taken into account when attempting to generalize the results. In particular, only two professions were incorporated in the study. Additionally, the nature of the semi-structured telephone interview process introduced the possibility of interviewer bias, primarily through clarification dialogue surrounding the categorization of item examples into one of the four pre-defined domains. For example, the interviewer may have asked for clarification whether the item provided by the interviewee was really an “effective method” or instead an “effective trait,” with the final categorization based on the interviewee perspective.

This study was designed to provide results that were practical and readily applicable, yet also hypothesis-generating for future research. The modified Delphi method employed in this study allowed delineation of perceptions and expert opinions to produce items of consensus that could be readily adapted for faculty development and teaching evaluation. This is a necessary first step in the identification of areas that require more rigorous qualitative study methods to better elucidate reasons for large variation in perceptions of teaching effectiveness.

In a few areas, significant divergence in perceptions was observed between the two disciplines. Pre-requisite knowledge of both commonalities as well as differences in perceptions of teaching effectiveness could be important when members of these disciplines are working together to design educational programming. In a more general sense, these results hint at possible core philosophical differences between health professions educators with regard to ideas of effective teaching. Again, knowledge of these differences can be taken into account when curricula, such as those related to interprofessional education, are being developed by individuals from multiple disciplines. Proactive strategies could be considered to mitigate potential obstacles these differences could result in, thus making for a more cohesive and effective team to deliver interprofessional health education.

Conclusion

A consensus-building approach of exemplary educators revealed some perceptions of effective teaching that appeared to be consistent across nursing and pharmacy disciplines. Expert perceptions, which display consensus, could be incorporated into best practices for effective teaching training and interprofessional teaching design. Other perceptions, which appeared profession-centric, could be applied in interprofessional teaching design to proactively embrace commonality and celebrate differences.

Acknowledgments

The authors acknowledge Sara Hopkins-Powell, PhD, Pacific University; William E. Fassett, PhD, Washington State University; Adrian Anast, PhD, A.T. Still University for serving as content reviewers of the assessment tools.

References

- Bain, K. (2004). *What the best college teachers do*. Cambridge, MA: Harvard University Press.
- Barnes, J. (1985). Experience and student achievement/teacher effectiveness. In T. Husen & T. N. Postlethwaite (Eds.), *International encyclopedia of education: Research and studies* (pp. 5125-5128). Oxford, England: Pergamon Press.
- Cooke, M., Irby, D. M., Sullivan, W. & Ludmerer, K. M. (2006). American medical education 100 years after the Flexner report. *New England Journal of Medicine*, 355(13), 1339-1344.
- Custer, R.L., Scarcella J.A., & Stewart B.R. (1999). The modified Delphi technique: A rotational modification. *Journal of Vocational and Technical Education*, 15(2), 1-10.
- Davidovitch, N. & Soen, D. (2006). Using students' assessments to improve instructors' quality of teaching. *Journal of Further and Higher Education*, 30(4), 351-376.
- Edstrom, K. (2008). Doing course evaluation as if learning matters most. *Higher Education Research & Development*, 27(2), 95-106.
- Ganley, D. D., Quintanar, A. P., & Loop, L. S. (2007). Raising the bar of teacher quality: Accountability, collaboration and social justice. *College Quarterly*, 10(3), 1-11.
- Goldhaber, D. & Anthony, E. (2007) Can teacher quality be effectively assessed? National board certification as a signal of effective

- teaching. *Review of Economics and Statistics*, 89(1), 134-150.
- Hall, P. (2005). Interprofessional teamwork: professional culture as barriers. *Journal of Interprofessional Care*, 19(Supp 1), 188-196.
- Hamilton, J. (2011). Two birds with one stone: addressing inter-professional education aims and objectives in health profession curricula through interdisciplinary cultural competency training. *Medical Teacher* 33(4): e199-203.
- Hickok, E. (2006). Higher education needs reform, too. *Chronicle of Higher Education*, 52(27), B48.
- Jones, A. (2008). Preparing new faculty members for their teaching role. *New Directions for Higher Education*, 143, 93-100.
- Lohman, J. (1996). Characteristics of exemplary teachers. In M. D. Svinicki and R. J. Menges, (Eds.), *Honoring exemplary teaching. New Directions in Teaching and Learning*, no. 65. San Francisco: Jossey-Bass.
- Marsh, H. W. (2007). Do university teachers become more effective with experience? A multilevel growth model of students' evaluations of teaching over 13 years. *Journal of Educational Psychology*, 99(4), 775-790.
- McDonough, R.P. & Bennett, M.S. (2006). Improving communication skills of pharmacy students through effective precepting. *American Journal of Pharmaceutical Education*, 70(3), Article 58.
- Ramsden, P. (1992). *Learning to teach in higher education*. New York: Routledge.
- Singh, D. K. & Stoloff, D. L. (2007). *Measuring teacher dispositions*. Paper presented at the meeting of the National Fifth Annual Symposium on Educator Dispositions, Erlanger, KY. ERIC ED499134, Retrieved from <http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED499134>
- Snell, L., Tallett, S., Haist, S., Hays, R., Norcini, J., et al. (2000). A review of the evaluation of clinical teaching: new perspectives and challenges. *Medical Education*, 34, 862-870.
- Song, K. H. (2006). A conceptual model of assessing teaching performance and intellectual development of teacher candidates: a pilot study in the US. *Teaching in Higher Education*, 11(2), 175-190.
- Solem, M. N. & Foote, K. E. (2006). Concerns, attitudes, and abilities of early-career geography faculty. *Journal of Geography in Higher Education*, 30(2), 199-234.
- Trautmann, N. (2008). Learning to teach: Alternatives to trial by fire. *Change: The Magazine of Higher Learning*, 40(3), 40-45.
- Turoff, M. & Hiltz, S. R. (1995). Computer based Delphi processes. In M. Adler & E. Ziglio (Eds.), *Gazing into the oracle: The Delphi method and its application to social policy and public health* (pp. 56-88). London, UK: Kingsley.
- Walker, R. J. (2008). Twelve characteristics of an effective teacher: A longitudinal, qualitative, quasi-research study on in-service and pre-service teachers' opinions. *Educational Horizons*, 87(1), 61-68.
- Whitcomb, M. E. (2007). Medical education reform: Is it time for a modern Flexner report? *Academic Medicine*, 82(1), 1-2.
- Vygotsky, L. S. (1978). *Mind and society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.

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Appendix 1

Exemplary Educators Interview Survey

1. Demographic questions
 - a. Name, Title and degree(s):
 - b. Background in education and years teaching: please indicate
 - c. Specific training or classes related to improving teaching
 - d. Educational awards or acknowledgement of success:
 - e. Average class size when teaching: please indicate
 - f. Location (city, state, university):
 - g. Gender and age (using a range): please indicate
2. Please state 3 examples of effective teaching methods
3. Please state 3 examples of ineffective teaching methods
4. Please state 3 examples of effective active learning techniques
5. Please state 3 examples of effective teacher trait

Follow-up Exemplary Educators Interview Survey

1. Collate the answers for examples of questions 2-5, email results, and confirm choices with Exemplary Educators in second round of phone calls (Delphi Method)
 - a. Please rate the following examples of effective teaching methods
(1 = strongly agree 5 = neutral, 10 = strongly disagree)
 - b. Please rate the following examples of effective active learning methods
(1 = strongly agree 5 = neutral, 10 = strongly disagree)
 - c. Please rate the following examples of effective teacher traits
(1 = strongly agree 5 = neutral, 10 = strongly disagree)
 - d. Please rate the following examples of effective teacher traits
(1 = strongly agree 5 = neutral, 10 = strongly disagree)

Appendix 2

Effective Methods (EM)	
1	Active engagement with students in class
2	Application of concepts: Link concepts to clinical or practice connections: use real examples
3	Assessment as learning, rubrics to share expectations
4	Case studies: topic overview, readings, develop plans, group critique
5	Compare and contrast, applying knowledge to examples
6	Computer cases with decision tree to explore options
7	Computer Response System throughout course
8	Debate: ethics topics, students on each side of issue debate
9	Engaging students, even prior to class (short quiz, open book)
10	Focus on your message and don't compromise it to use a technique or method: don't lose your message in your method
11	Group discussions at end of day: apply what they learn
12	Group learning so students have to learn with each other
13	Humor, when it comes naturally
14	Instructional design: elaboration theory for conceptual sequencing of learning development. Sequence or scaffold content and increasing complex concepts
15	Preparedness: be prepared for teaching
16	Problem solving and decision making
17	Provide guidance and feedback to students, detailed feedback to improve
18	Questions: Ask challenging questions, connect material to student experiences, Socratic method
19	Reinforcement of key concepts and look for recognition in students
20	Respect for students, open to other viewpoints
21	Role model professional behavior for students
22	Role playing
23	Team based learning
24	Use time efficiently: Brain is refractory after 30 minutes: get key points in before this time

Appendix 2 (cont'd)

Ineffective Methods (IM)

- | | |
|----|---|
| 1 | Arrogant, not approachable or available |
| 2 | Being uncivil: don't be sarcastic, don't be uncivil toward students, creates unhealthy environment |
| 3 | Changing the course while in progress, inconsistencies and too teacher focused rather than student focused |
| 4 | Checklist grading: doesn't push students to analysis and synthesis, still behavioral teaching rather than cognitive teaching |
| 5 | Disorganized |
| 6 | Disrespectful of students' knowledge base, concerns, not being flexible |
| 7 | Don't know answer, tell students to follow up then don't: not valuing the students |
| 8 | Faking it: don't know so redirect, over complicate or untrue statement: students know |
| 9 | Feeding information to students when they don't care |
| 10 | Forced group work when not applicable to content |
| 11 | Groups too large, not all engaged |
| 12 | Inappropriately directed learning: unfocused |
| 13 | Lack of caring if students learn |
| 14 | Lack of concern about students time: too much in course or class period |
| 15 | Lack of preparation: approach naively |
| 16 | Lecturing poorly: without objectives, simply reading slides, poor PowerPoint design |
| 17 | Open-ended questions in large classes or questions with one answer only or individual dialogue with student-only excluding others |
| 18 | Poor learning environments: poorly lit room |
| 19 | Static during lecture: not moving at all and the only one presenting info, avoiding interaction |
| 20 | Stories provided without focus or applicable intent |
| 21 | Team teaching when two instructors are opposite in their teaching, produces disconnect with the student |
| 22 | Too much in a lesson or course, expectations are too high or unrealistic, can't cover everything |
| 23 | Treat the student as a number, the worst thing is not to learn their name |
-

Appendix 2 (cont'd)

Active Learning (AL)

- 1 “Clickers” or Student Response Systems used within classes
- 2 “Lecture challenge”: questions with portion of information needed for answer, link to application
- 3 Articles (abstract) to emphasize teaching point, breaking it down for each section
- 4 Case studies: wide variety, feedback, encourage learn from each other, increase in complexity
- 5 Coaching as form of feedback, in class, clinic and discussions
- 6 Computerized case studies
- 7 Critical thinking activities with feedback and evaluation
- 8 Discussion: Students share personal experiences
- 9 Games: “Jeopardy,” “Millionaire” (fast-paced slides of questions as review in class or online), Role-playing
- 10 Group learning techniques: questions to stimulate group discussion during or at end of class
- 11 Homework assignments to evaluate if students “get it,” template for multiple questions at a higher level
- 12 Integrated practice lab: Learning by doing in skills lab to allow for self-correction and coaching and retainable knowledge
- 13 Large classroom activity: describe then “think about it,” provide scenario, active discussion to apply, “shout it out”
- 14 Minute paper (most important concept learned and remaining burning question)
- 15 One on one interaction with students, especially in research
- 16 Online discussions, questions are application and synthesis of knowledge
- 17 Online Resources: Use applicable websites for projects and application of concepts the present
- 18 Problem based learning (good facilitator = content expert and facilitator), guided design to teach problem solving with consistent instructor feedback
- 19 Round table discussions to critique grant application: 1 positive, 1 negative and discuss
- 20 Simulation Lab, very powerful “aha” and application
- 21 Student Presentations: in pairs. Seminar class works well to turn entire class over to students
- 22 Student Presentations: short PowerPoint presentation, peer evaluated, reflection of three things done well, three to improve
- 23 Team-based learning: emphasizes reading interpretation, critical thinking, assessment
- 24 Think pair share: parallel slides, professors’ contain questions and answers, students’ only have questions
- 25 Video tapes: applicable, involve a real issue, challenge their belief system

Appendix 2 (cont'd)

Effective Traits (T)	
1	Approachable: arrive early, be available
2	Care about student's learning not just convey info: assume responsibility
3	Compassion
4	Competent and contemporary: keep up on the literature
5	Safe environment, don't insult them
6	Effective communicator
7	Enthusiasm: show them you love it
8	Fairness
9	Integrity
10	Knowledge base of subject and being open to other points of view
11	Openness: new ideas, students perspective
12	Organized
13	Patience
14	Prepared
15	Professionalism: respect
16	Reflective, step back and evaluate
17	Respect students/learners
18	Responsible: Be responsible for course, don't take students for granted
19	Student-focused and understand what that means, get students to talk about their thinking rather than professor thinking
20	Timely response, do what you say when you are going to do it
21	Understand students are kinesthetic learners and have to be active in the learning process
22	Understand the learner/audience and what's important to them
23	Willing to seek evidence for best practices and familiarize self