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How do Perspectives on Teaching Vary Across Disciplinary Majors for Students Enrolled in Teacher Preparation?

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Abstract

Students enrolled in teacher training bring beliefs and values gained from their under-graduate majors into teacher certification programs. This study demonstrates that there are systematic differences in the way they view their teaching roles and responsibilities, and that these are linked to their academic backgrounds and to gender. Teacher training programs need to consider these differences while preparing students to teach in the secondary school system. Students in turn, need to be aware of their entering beliefs about teaching and learning as well as their predispositions about appropriate roles for teachers in their disciplinary major. As well, school systems need to employ more than one template of excellence for acculturating and evaluating new teachers.

Introduction

Throughout the process of becoming a teacher, students continuously revisit assumptions and beliefs they hold regarding learning, knowledge and teaching. Revisiting beliefs about learning, knowledge and teaching is not a simple matter since we often hold such beliefs without knowing that we hold them. Other times we hold them close and with conviction that they are right and justified. Therefore, the process of challenging pre-conceived notions of 'good teaching' can be fraught with difficulty and resistance. The path to understanding what it means to be a teacher is neither straight nor smooth. But it is most certainly worthy of study.

Factors that influence a teacher's development are only partially understood. Some researchers have shown that students enter preservice training believing that good teaching is highly related to one's content knowledge and abilities to convey that knowledge to others (Powell, 1992; Hollingsworth, 1989; Woodlinger, 1985; Weinstien, 1990). Feiman-Nemser et al (1988) found that prospective elementary teachers, for example, begin their introductory education course believing that teaching is telling and that learning is reproducing what the teacher tells you. Although they made no attempt to correlate specific disciplines with specific orientations to teaching, their overall findings suggest a possible relationship between one's disciplinary major and one's personal beliefs about teaching. In contrast, Rathbone and Pierce (1989) found that students entering secondary teacher preparation were convinced that good teachers should treat their classes like family and emphasize affective and interpersonal aspects over content knowledge – orientations that would have been more expected of aspiring elementary teachers than secondary teachers. In any case, as Carter (1990) points out, students come to teacher preparation programs with prior beliefs which act as 'filters' through which new messages concerning teaching and learning are reconciled with previously held information.

Thus, we know very little about the role of one's disciplinary background in prior beliefs about teaching. Do people entering their teaching careers with backgrounds in the arts or humanities hold similar or different

views of good teaching as do those who come from the sciences? To explore these questions and others, we have begun a longitudinal study of 488 aspiring teachers. This article reports on one aspect of that larger study – the relationships between disciplinary majors and preservice teachers’ perspectives on teaching for 356 people intending to teach in secondary schools where their disciplinary major largely determines the subject areas they are qualified to teach.

All three authors work at a large research university in western Canada. Most of the students entering our teacher education program come with bachelor’s degrees in subjects related to their major and have spent several years immersed in the culture of their discipline learning specific norms and conventions related to knowing, learning and teaching. These students have been exposed to powerful models of teaching and to specific expectations as learners. Together, these beliefs, norms, conventions, models and expectations constitute a ‘perspective on teaching’ that students bring with them to teacher education. Whether those perspectives are justified or even reflected upon, they nevertheless influence what is adopted, what is adapted, and what is rejected while these future teachers engage in their teacher education program (Powell, 1992; Knowles and Charvoz, 1989).

What is a Perspective on Teaching?

A ‘perspective on teaching’ is an inter-related set of beliefs and intentions related to knowledge, learning and the role of a teacher. It is a lens through which we view our work as educators. We may not be aware of our perspective because it is something we look through, rather than at, when teaching; thus our perspectives on teaching give direction and justification to our actions as teachers.

In this study we used the *Teaching Perspectives Inventory* (TPI) to assess prospective teachers’ orientations to teaching (Pratt and Collins 2000). The TPI is grounded in the empirical and conceptual work of Pratt (1992; 1998) and yields five perspectives: Transmission, Apprenticeship, Developmental, Nurturing, and Social Reform. None of these perspectives is either good or bad; they are simply different philosophical orientations to knowledge, learning, and to the roles and responsibilities of being an educator. It is important, therefore, to remember that each of these perspectives represents a legitimate view of good teaching when enacted appropriately. Conversely, each perspective holds the potential for poor teaching. Table I summarizes each of the five perspectives as measured by the *Teaching Perspectives Inventory* (www.TeachingPerspectives.com).

>>> Table I here <<<

Based on Pratt’s initial study of more than 250 teachers and on data from another two thousand educators who have taken the *Teaching Perspectives Inventory*, we have reasonable evidence that most educators hold one – and sometimes two of these perspectives as their dominant view of teaching and may only marginally identify with one or two others. It could not be otherwise, given that perspectives are composed of contradictory (and sometimes competing) beliefs about knowledge, learning, and teaching. We must add a caution however; it is common for people to confuse ‘perspectives on teaching’ with ‘methods of teaching’ or even ‘teaching styles’. These perspectives are far more penetrating and inclusive than methods or styles.

Rationale

People about to embark on their teaching careers have generally experienced four years of training in a disciplinary major, plus an additional year of teacher preparation courses, together with a 13-week practice-teaching experience. These five-plus years of intense preparation may augment and reinforce those pre-existing individual differences that initially governed a person’s selection of the sciences over the arts as a major, or physical education over technology education. Pre-service teachers enter their B.Ed. programs as “experienced actors in the school that they have attended...from that experience, they have formed beliefs

about schooling, teaching, and learning that are likely to vary with their histories and circumstances” (Bird, Anderson, Sullivan, and Swindler, 1993). Thus, subscribing to one or perhaps two of these perspectives on teaching may be imbedded in- or affected by one’s academic major as well as by co-factors such as gender, age, previous work experience, etc. This study restricted its focus to testing for differences due to academic major or gender since the large majority of students were in their early twenties and had not yet acquired a substantial career history.

Scale Development

During the 1990s, Pratt, Collins, Chan and other researchers operationalized the themes and concepts uncovered in Pratt’s interviews with more than 250 teachers (mostly of adults) in Canada, the United States, China, Singapore, and Hong Kong. Teachers’ themes and self-analyses were converted into an instrument for assessing perspectives on teaching – the *Teaching Perspectives Inventory*.

More than 3000 respondents from a wide range of professions have completed the TPI. Analyses of their responses confirm that the five TPI scales have factorial integrity and demonstrate both test-retest and inter-item reliability (Pratt and Collins, 2000). The 356 aspiring teachers in this study are generally consistent with those overall results. Their TPI scores averaged 3.8 on 5-point scales of frequency or agreement, suggesting that the 45 items are regarded overall as desirable views to espouse, or positive beliefs to hold.

Methodology

We engaged the support of the Faculty of Education’s administration in requesting instructors to make a one-hour time slot available for us to gather information from students. (Academic jurisdictions that would be called “Schools” or “Colleges” elsewhere are termed “Faculties” at our university.) During this hour, students completed an early on-line version of the *Teaching Perspective Inventory* together with brief demographic and background information. All instructors but one invited us to their course sections, thus yielding a study group of 356 out of the year’s total enrolment of 378 students seeking secondary school certification. Students seeking primary or middle-school certification were also surveyed, but are not included as part of this study because disciplinary major plays a less important role in their upcoming careers.

Our University’s current program of teacher education is typical of many others that espouse a developmental or ‘learner-centered’, constructivist focus with a corresponding de-emphasis on transmission of content. Whether this developmental view was evident to students became clearer as we interviewed students and asked them to talk about their perceptions of the “messages” they received from their teacher education program.

Results

Do these prospective teachers exhibit the common pattern of at least one and perhaps two dominant teaching perspectives? And which of the five perspectives is most commonly represented? Yes, these final-term students showed a pattern of dominant teaching perspectives similar to most other teachers we have surveyed. Of the 356 total respondents, 251 (70.5%) had one dominant perspective, and 92 (25.8%) had two. Only 12 people (3.4%) showed no perspective that clearly stood out as a dominant or preferred view of their role. (A dominant perspective is defined as a score on one or more of the TPI scales that is one standard deviation or more above the mean of the individual’s five scores). As well, 267 people (75.0%) had one perspective that was clearly “recessive” (one standard deviation or more below their individual mean). Some 84 people (23.6%) had two such low-scoring perspectives, and only four people (1.1%) had no distinguishable low score.

>>> Figure 1 here <<<

Figure 1 shows the five perspectives and the numbers of people having one or more dominant or recessive scores on each. Clearly, Nurturing is the single-most common dominant perspective -- not surprising for people who will shortly become secondary teachers. As among most other teachers, Social Reform is the least frequently dominant perspective and often the most commonly recessive – consistent with the reality that the main agenda for these pre-service teachers was to acquire and master the content and skills in their new careers, before attempting to reform the social structures of which it is a part.

Irrespective of students' perspectives scores on their own teaching, they offered occasionally illustrative comments during the one-on-one interview sessions. For two students, the program's "message" had clearly been that of a developmental view of teaching.

I don't know if they [teacher educators] actually...said it or not, but I had the idea that the kids are just supposed to figure things...out on their own.

I guess we had examples of teachers. Some teachers came in and we watched videos that showed really exceptional teachers that were able to captivate their class. Teachers that are able to get their students to want to learn and that they're excited... They're putting their hands up and they are able to let them work with the material and that it is student-centered rather than teacher-centered. You [the teacher] were not up there dictating information to them, but you are giving them the option or the ability to manipulate it and work with it and see for themselves how they understand and why.

Conversely, another student did not sense that any particular "message" was being promulgated by her program—perhaps because of her own filters and presuppositions about good teaching.

I never felt like I was being told that this was the right way or this is the wrong way... Maybe that was just what I internalized from what was subversively given. Maybe they gave a whole continuum of things and I just blocked everything else out except for this [student centered teaching] because this is what fits with me.

In these examples, students acknowledge their own sense of what the *Teaching Perspective Inventory* makes explicit, that even as pre-service teachers, they have different views of what teaching is supposed to be and what are their essential roles in the process.

Differences Among Disciplinary Majors

Students arrive at our university with a variety of academic backgrounds and experiences, and there is no single best way to classify the wide range of their previous academic majors. However, the Faculty of Education itself maintains a 16-category system of secondary school "Specializations" that designates which subject areas students are qualified to teach – given their previous preparation as evidenced by their academic majors and minors. These specializations were re-grouped in order to achieve more evenly balanced numbers and fewer overall categories that better reflected the broader conceptual differences among people's academic majors and the objectives of this stud. A moment's attention to the two- or three-letter abbreviations preceding each category total will simplify interpreting upcoming tables and figures:

Mathematics/Science (MS=51) included students in Math (n=18), Chemistry (n=22), Physics (n=9), and Science (n=2);

Life Sciences (LS=64) included Biology (n=57) and Environmental Science (n=7);

Social Studies (SS=60) contained Geography (n=14) and History (n=46);

Language Arts (LS=58) included English (n=46) and French (n=12);

Home and Technical Sciences (HST=37) grouped Home Economics (n=7) with Technical Education (n=30);

Expressive Arts (EA= 15) included both Art (n=3) and Music (n=12);

Business (BS=22) and **Physical Education (PE=49)** were both single-discipline categories.

Do perspectives on teaching vary across disciplinary majors? Yes, for all five of the perspectives; and they vary in systematic ways. Do perspectives on teaching vary by gender? Yes, for two of the five perspectives. For the Nurturing perspective, women scored markedly and significantly higher than men, and on the Developmental perspective, women again scored significantly higher, but to a lesser degree. The other three perspectives showed no overall significant gender differences.

Figure 2 plots the group means for the five perspectives across the eight different academic groupings. Nurturing scores are generally high for all academic groups, while Social Reform scores are generally lowest. It is important to examine not only which perspectives are high or low, but also which of the groups are high and which are low on *each* perspective.

>>> Figure 2 here <<<

The following paragraphs detail each of the five perspectives in terms of academic groups that were statistically different from each other.

Not surprisingly, prospective teachers in both life sciences and math/sciences scored significantly higher on the Transmission perspective than did people in language arts, expressive arts, or home and technical sciences. As well, people preparing to become physical education instructors also scored high on Transmission, equally as high as prospective math and science teachers. There were no overall group differences in terms of Apprenticeship. On the Developmental perspective, people's scores in language arts and social studies were significantly higher than in the life sciences, home and technical sciences, and physical education. Prospective teachers in language arts, home and technical sciences, and physical education scored significantly higher on Nurturing than those preparing to teach mathematics/sciences or the life sciences. Gender differences were notable: women's Nurturing scores showed significantly higher averages than men's. Social Reform showed the largest inter-group differences of all. Students preparing to teach in social studies, language arts and home and technical sciences were significantly higher on Social Reform higher than those in the life sciences or mathematics/science

>>>Table II here<<<

Table II suggests that there is some consistency between students' perspectives on teaching role and the content they are to teach. Content areas where the content is well-defined and where there is an assumption of single 'right' and 'wrong' answers (math/science, life sciences, etc) are represented by students who are more often Transmission-oriented and who see their task to deliver the content in its authorized forms. In contrast, language arts and social studies are dominated by pre-service teachers who see their role from a more Developmental perspective -- engendering deeper understanding and promoting critical thinking skills.

Aspiring teachers with a Nurturing perspective are more likely to be preparing to teach language arts, physical education or home and technical sciences while math/science and life science instructors show less tendency toward Nurturing. Similarly, language arts, social studies, and home and technical science pre-service teachers show a greater orientation toward social reform views, whereas people in the sciences clearly do not view their role as one of reform. Interestingly, the finding of no differences among any of the eight groups in terms of Apprenticeship together with its generally high overall mean may suggest that teaching in any of the academic disciplines can profit by well structured apprenticeship experiences such as job internships, career days, or intelligently crafted work projects.

Implications

What do these findings suggest to university programs that prepare students for teaching careers in secondary education, to programs in academic majors that serve as the feeders to teacher training in secondary education, and to students themselves?

A growing literature on 'reflective practice' admonishes us all to be mindful of why we do what we do. Yet rarely are there clear guidelines that specify what we are to reflect upon or how we should do so. It is easy for teachers (seasoned or pre-service) to consult checklists of teaching methods, classroom techniques or teaching "styles", but these are quite different from teachers examining their roles and responsibilities, or scrutinizing the intentions and beliefs that underlie their actions as teachers. Results from their individual profiles on the *Teaching Perspectives Inventory* can inform them about these more subtle, underlying dimensions and enable them to test assumptions which may be implicit (or about which they may be unaware) concerning their own teaching.

Secondary schools and school districts have a weighty responsibility to monitor and evaluate the performance of new teachers and to insure that they are mindful of local expectations and extant views of what constitutes 'good teaching.' All too often, in this process, schools and districts have a single (and sometimes myopic) view of how teachers should teach. It is critical for schools and districts to keep all five teaching perspectives in the foreground of their evaluation practices to ensure a pluralism of excellence and to recognize that there are many ways to be an excellent teacher – irrespective of teaching topic and content.

Throughout this phase of the more extensive longitudinal study, it has been tempting to wonder about 'changes', to question how much impact the teacher training program has on a student's perspective on teaching, and to speculate whether the learner-centered, developmental focus of our program actually changes students' own perspectives and adds a developmental overlay which was less evident on arrival.

These questions cannot yet be answered, but the finding that different academic backgrounds are associated with different profiles of Transmission, Apprenticeship, Developmental, Nurturing, and Social Reform has reminded us that teacher training programs are likely to have different impacts depending on disciplinary major and on an individual's profile of teaching perspectives upon entry into the program. Some teacher training programs are unlikely to reconfigure major components of their programs to conform with students' profiles. They should, at the same time, encourage a range of different structural and personal solutions as students amalgamate the various features of the program together with their unique profiles and go in search of their own personal philosophy of teaching.

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Table I. Summaries of Five Teaching Perspectives

Transmission: *Effective teaching requires a substantial commitment to the content or subject matter.* Good teachers have mastery of the subject matter or content. It is a teacher's primary responsibility to represent the content accurately and efficiently for learners. It is the learner's responsibility to learn that content in its authorized or legitimate forms. Good teachers take learners systematically through sets of tasks that lead to content mastery. Such teachers provide clear objectives, adjust the pace of lecturing, make efficient use of class time, clarify misunderstandings, answer questions, provide timely feedback, correct errors, provide reviews, summarize what has been presented, direct students to appropriate resources, set high standards for achievement and develop objective means of assessing learning. Good teachers are enthusiastic about their content and convey that enthusiasm to their students, and for many learners, they are memorable presenters of their content.

Apprenticeship: *Effective teaching is a process of enculturating students into a set of social norms and ways of working.* Good teachers are highly skilled at what they teach. Whether in classrooms or at work sites, they are recognized for their expertise. Teachers must reveal the inner workings of skilled performance and must now translate it into accessible language and an ordered set of tasks. Learning tasks usually proceed from simple to complex, allowing for different points of observation and entry depending upon the learner's capability. Good teachers know what their learners can do on their own and what they can do with guidance and direction; namely, engaging learners' within their 'zone of development'. As learners mature and become more competent, the teacher's role changes, and over time, teachers offer less direction and give more responsibility as they progress from dependent learners to independent workers.

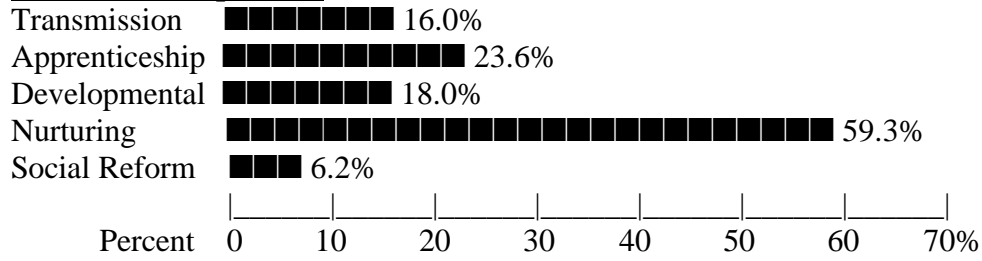
Developmental: *Effective teaching must be planned and conducted "from the learner's point of view".* Good teachers must understand how their learners think and reason about the content. The primary goal is to help learners develop increasingly complex and sophisticated cognitive structures for comprehending the content. The key to changing those structures lies in a combination of two skills: (a) effective questioning that challenges learners to move from relatively simple to more complex forms of thinking, and (b) 'bridging knowledge' which provides examples that are meaningful to the learner. Questions, problems, cases, and examples form the bridges that teachers use to transport learners from simpler ways of thinking and reasoning to new, more complex and sophisticated forms of reasoning and problem solving. Good teachers work hard to adapt their knowledge to each learner's level of understanding and ways of thinking.

Nurturing: *Effective teaching assumes that long-term, hard, persistent effort to achieve comes from the heart, as well as the head.* People are motivated and productive learners when they are working on issues or problems without fear of failure. Learners are nurtured by knowing that (a) they can succeed at learning if they give it a good try; (b) their achievement is a product of their own effort and ability, rather than the benevolence of a teacher; and (c) their efforts to learn will be supported by their teacher and their peers. The more pressure to achieve, and the more difficult the material, the more important it is that there be such support for learning. Good teachers promote a climate of caring and trust, helping people set challenging but achievable goals, and providing encouragement and support, along with clear expectations and reasonable goals for all learners. They do not sacrifice self-efficacy or self-esteem for achievement. Therefore, the assessment of learning considers individual growth or progress as well as absolute achievement.

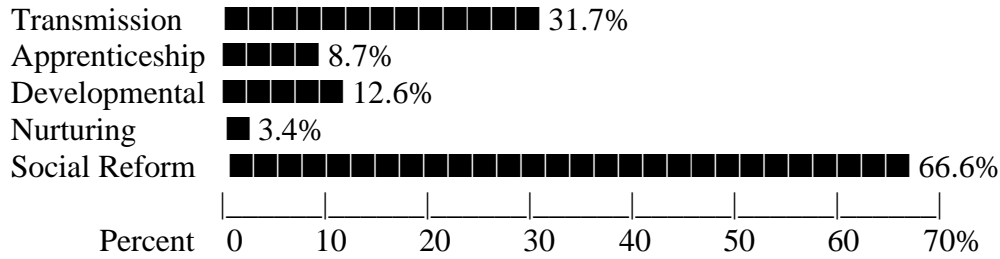
Social Reform: *Effective teaching seeks to change society in substantive ways.* From this point of view, the object of teaching is the collective rather than the individual. Good teachers awaken students to the values and ideologies that are embedded in texts and common practices within their discipline. Good teachers challenge the status quo and encourage students to consider the how learners are positioned and constructed in particular discourses and practices. To do so, common practices are analyzed and deconstructed for the ways in which they reproduce and maintain conditions deemed unacceptable. Class discussion is focused less on how knowledge has been created, and more by whom and for what purposes. Texts are interrogated for what is said and what is not said; what is included and what is excluded; who is represented and who is omitted from the dominant discourses within a field of study or practice. Students are encouraged to take a critical stance to give them power to take social action to improve their own lives; critical deconstruction, though central to this view, is not an end in itself.

Figure 1. Distribution of Perspectives for the Five TPI Scales.

Dominant Perspectives



Recessive Perspectives



*Totals will exceed 100% since a person may have more than one dominant or recessive perspective.

Figure 2. Means for Eight Academic Groups on Five Teaching Perspectives

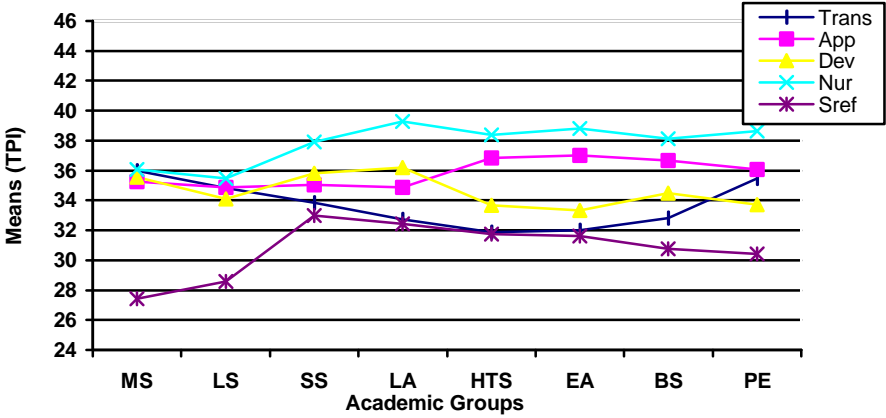


Table II. High and Low Academic Groupings on Five Teaching Perspectives

| | Trns | App | Dev | Nur | Soc Ref |
|------|----------------|------------|----------------|----------------|----------------|
| High | MS, LS, PE | ns | LA, SS | LA, PE, HST | SS, LA, HST |
| Low | LA, EA, HST | | LS, PE, HST | MS, LS | LS, MS |