Teacher Socialization in Technological Education

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In a recent technological education teacher development study, two elements of teacher socialization–the process of formally preparing to become a teacher (Ginsburg, 1988, p.1)–were singled out for review. First, the study set out to examine the influences on teacher socialization prior to formal teacher education. Second, the impact of pre-service teacher education itself, was explored. The socialization process for technological education teachers was felt to have two dimensions: The first concerns the adjustment would-be teachers make when initially preparing for the profession. Feiman-Nemser (1990) refers to this adjustment as a transformative one because teachers come to the profession with a range of preconceptions that may or may not be effective in the classroom instruction component of a teacher's work. The second element of socialization is identified in the occupational socialization research literature (Schein, 1985) and involves the adjustment a teacher makes as she/he becomes an educator in a broader context, i.e., the adjustment of the individual to the culture of the profession. The purpose of this paper is to report the results of the teacher development study undertaken at the University of Western Ontario (UWO), Faculty of Education.

Problem Statement

Concerns that prompted the UWO investigative group included a perceived tendency on the part of technological education teachers a) to adopt a much broader spectrum of curriculum goals, e.g., preparing students for jobs, than their counterparts in general education subjects and, b) the tendency on the part of technological education teachers to congregate with peers from their own program area, making opportunities for contributions to the school culture and the profession generally, problematic. In the absence of formal research to validate these two perceptions but armed with a Ministry of Colleges and Universities grant and mandate, a conventional technological teacher education program was modified. Teacher development project team was formed and a study,

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which was to inform the program change process, designed and executed. The broader issues in technological teacher education are relatively well understood by technology teacher educators. First, technology and the way knowledge about it in schools is transmitted, is changing. Second, substantive analysis of past practices in technological teacher education, is overdue. And third, teacher development is a complex human and professional process which combines personal and environmental factors that are often poorly understood.

The UWO teacher development project was guided by two questions. To what extent is successful socialization into the teaching profession a function of the knowledge, skills, and values that candidates bring with them to the teacher preparation process? And, what impact does the formal teacher preparation process have, if any, on the predispositions of teachers? From a program change viewpoint investigators wanted to know if there was some way to predict what candidate characteristics and experiences would be valuable in ensuring a smooth transition into the profession. The research team also wanted to know if technological education teacher candidates were unique in their socialization patterns. The research findings and post-study insights into research design, proved to be particularly revealing.

The Teacher Socialization Literature

Zeichner and Gore (1990), who define teacher socialization as the process whereby the individual becomes a participating member of a society of teachers, are skeptical about the impact a teacher education program can have on teachers' predispositions to teaching. Studies (Lortie, 1975; NCRTE, 1988b) suggest that, at best, teacher candidates become socialized into the profession during the practice teaching component of teacher preparation and in the first two years of teaching. Whether or not the socialization process for technological education teachers is any different than it might be for general education program area peers, is not identified in the teacher socialization literature. There is some evidence, (Burden, 1990), which implies technology teachers' development should be similar to the norm for all aspiring teachers. Zeichner and Gore (1990, p. 332) organize a literature review around three career stages: Prior to formal teacher education (pre-training influences); during pre-service teacher education; and during the in-service years of teaching. The first two of these stages are used as a structure for the following analysis of the research.

Pre-training Influences on Teacher Socialization

Zeichner and Gore (1990, p. 334), categorize the theories on pre-training influences as follows: evolutionary, psychoanalytic, and apprenticeship of observation. Evolutionary influences, first proposed by Stephens (1967), provide an interesting way to account for the socialization of teachers. Stephen's theory,

while largely ignored by scholars of teacher socialization, emphasizes the role of primitive spontaneous pedagogical tendencies in explaining why teachers act as they do. According to the evolutionary view, teachers bring to teacher education a set of predispositions that are present in all individuals to varying degrees.

A second position (Wright & Tuska, 1967), the psychoanalytic view, suggests that teacher socialization is affected to a considerable extent by the quality of relationships teachers had as children with important adults, e.g., mother, father, teacher, and that becoming a teacher is, to some extent, a process of trying to become like significant others in one's childhood or trying to replicate early childhood relationships. According to this view, teachers are governed by the effects of this early childhood heritage on their personalities.

The "apprenticeship of observation" explanation, offered by Lortie (1975), suggests that teacher socialization occurs largely through the internalization of teaching models during the time spent as pupils in close contact with teachers. Formal teacher education, according to Lortie, has little impact on cumulative effects of this anticipatory socialization. Lortie's argument, according to Zeichner and Gore, is based on several studies in which teachers attested to the tangential role of their formal training and in which they frequently referred to the continuing influence of their earlier mentors. Such role models, as many students know from experience, can be both positive and negative.

The three explanations, as a collective, do provide a powerful argument for looking at the experiences and predispositions of teacher candidates prior to entry into teacher education institutions, and for developing greater insight into the relationship between teacher preconceptions about teaching and teacher socialization.

Program Influences on Teacher Socialization

A review of the literature in the field of technological teacher education revealed a paucity of formal study on the impact of pre-service education and on technological teacher development generally. As a result, insights into the impact of pre-service teacher education in the field of technology could not be established. The situation in teacher education research (no reference to specific subject areas), is somewhat different. Where research has been conducted, the results regarding the effectiveness of pre-service teacher education are inconclusive. Pre-service teacher education programs (campus-based methods and foundations courses in particular), according to Mardle and Walker (1980), have little impact on the values, beliefs, and attitudes students bring with them to the profession, and influence little their subsequent actions in the classroom. What is known about the impact of university programs on students, is that it is difficult to isolate cause and effect (Zeichner and Gore, 1990).

While evidence on the effect of practicum experience is equally weak and ambiguous, Hoy and Woolfolk's (1990) research [cited in Zeichner and Gore] is helpful. They examine the influence of the student teaching experience on three teacher perspectives: orientations toward control, social problem-solving style, and efficacy. Orientation toward control was defined as the ability of a teacher to establish and maintain order in the classroom. Social problem-solving style was defined as the teacher's approach to student/teacher relations. These researchers found that teachers who encouraged student autonomy and responsibility tended to have students who were more intrinsically motivated and better problem solvers. Efficacy was defined as the teachers' sense of his/her own ability to affect student learning. The assumption is that the more efficacious the teacher, the higher the students' achievement (p. 280).

Research Design and Methodology

The research design adopted is used extensively in social work studies where the position and role of the investigator vis-à-vis the subjects under study, must always be considered. The case study approach was used to document student life-history information (Cole, 1991), to engage student participants in thought and reflection about program changes, to verify and record those reflections, and to measure the impact of the program. A group of students were invited to participate in the study for information gathering and feedback purposes. The participant-sensitive design is described by Rossi and Freeman (1989), and Goodson (1988). The participants in the study varied in age from the early twenties to late thirties, and represented technical specializations in architectural drafting, graphics, automotive, art, and electricity. They were female and male, had from five to fifteen years experience in business and industry, and ranged in formal education background from grade twelve to university graduation.

The method used to engage the teacher candidates in the study was ethnography. Borrowing from the discipline of anthropology, it was felt that the best way to glean information about the culture of aspiring technological education teachers was to explore the concepts, beliefs, and practices that could be found to characterize members of such a collective. Ethnography means, literally, a picture of the "way of life" of some identifiable group of people (Woolcott, 1988.) An anthropologist's task, as an ethnographer, would be to learn about, record, and ultimately portray the culture of the group (p. 188). The information collected in the study was derived from three sources, each of which could be used by itself or in combination so as to identify possible points of consensus or conflict. The data collected were from a pre- and post-program questionnaire, student journals, and pre- and post-interviews. These methods are described by Patton (1980), and Lincoln and Guba (1985).

The Process

Several stages were established for collection and documentation of experiences prior to and during the program. In the first stage a group of thirteen students was selected for individual case study (Merriam, 1988; Yin, 1989) to represent the diverse academic backgrounds, technological specializations, ages, and stages of career development. Out of the original sample of thirteen, eleven remained as participants throughout the academic year. To provide a contrast with this core group, base line data were also collected from the total student population (forty-five students) participating in the technological education program. Orientation meetings were held with the core student group to introduce the case participants to the project and explain the level of commitment that would be expected.

In stage two, two different methods were used to collect information that would assist the students serving as case studies in documenting their experiences. These students were encouraged to keep a journal of each week's school activities and to submit weekly memos to the project team on how things were going (Strauss, 1987). Life-history interviews were conducted to help establish a path of activities and experiences that led to the current choice of becoming a teacher (Cole, 1991; Connelly & Clandinin, 1990; Jones, 1983). Initial information on perceptions of being a teacher and career goals was collected during the Fall term using a flexible interview guide (McCracken, 1988). Each candidate was interviewed early in the pre-service teacher preparation process as well as during, and after it. Plans to interview these candidates in two years time constitute a part of the research design.

In stage three, a follow-up interview was conducted at the end of the Spring term which again asked students about their perceptions of being a teacher and also collected more detailed information on the structure and components of the program. In stage four, the research team read transcripts of the case study interviews and information from the weekly memos, and developed key themes for sorting and analyzing the information. Organizing and categorizing techniques described by Miles and Huberman (1984) were used to further sort the contextual data and pull together quotes highlighting major themes and recommendations for program changes.

The techniques included coding of themes from weekly memos, narrative reflections from investigators, and development of a path analysis tracing individual decisions to become a teacher. Stage five, yet to be completed, will analyze follow-up interview transcripts to assess the evolving beliefs of the participants.

Research Findings

The following data describe the diverse backgrounds, perceptions, tendencies, and expectations of the participants in the study. These data are organized into three categories. The first includes observations about the field of technological education teaching generally, the second about the practice teaching component of the pre-service program, and the third about the teacher education program at the Faculty. A short description of George (a pseudonym for one case study) provides a further illustration of themes that recur in the data.

The Field of Technological Education Teaching

Investigators found that teaching has dramatically different meanings among students in the technological education program. The only evidence which could be cited to explain this finding is that the teacher candidates came from varied business and industry backgrounds with many different technical specializations and formal education levels, as well as apprenticeship and work experiences. A wide range of expectations about teaching was also expressed by the student teachers who participated in the Fall and Spring interviews.

Student teachers in the program were pro-active about the human development aspect of education. They felt, because of their past experiences, they could empathize with high school students facing personal problems and difficulties in school. They expressed a commitment to take guidance counseling courses or to complete further studies so they would be better equipped to help students facing a variety of problems. There was a strong desire among the respondents to get more specialized training in their field, special education, and pedagogical skills.

Students were concerned about the low status assigned to technological education teachers and the curriculum in secondary schools. Most participants in the study felt technological education had clearly been short-changed. One student stated, for example: “There is so much you can take from my field and apply to mathematics and even English [courses].” Some students claimed technological education offered a model of work within the school environment which benefits a broad range of high school students with varying levels of learning abilities and competencies. Individual desires regarding career goals varied in nature and magnitude.

Perceptions During Practice Teaching

The practicum experience was different for every student: different types of schools, ability levels, associates, and programs. Despite these differences, students were generally positive about the benefits they received from the practi--cum experience. One student believed “ . . . the practicum is much more valuable than the Faculty of Education experience. Learning does not mean much

until you try to apply it." The same student had two associates who used different approaches to teaching; she was able to see the advantage and disadvantage of each approach. Another student commented: "I think the practicum is much more of an influence on your career because you actually learn how to work with kids . . . I think that's something they just cannot teach in the classroom at the Faculty."

Practice teaching helped many student teachers grasp the realities of the classroom. They realized teaching was a craft that combined competence within a specialized area of technology and service to a profession. One of the most interesting discoveries was that in education, one spends more time on the process than in the product-oriented business and industry environment. "The main objective is not to teach a technical specialization, but to provide an education." And, in one classroom, "kids may have varying levels of ability." There was also a realization that teachers face "political and social issues in schools" such as impractical school board decisions, student family needs, and discipline problems.

Perceptions of the Teacher Education Program

Perceptions of the way the technological education program at the Faculty was structured, varied. Most students felt that grouping the many technical specialists into broad fields such as communication, production, and transportation technology was a good program design feature. However, many students believed there to be little consistency in student assessment from one faculty member to another: "All students must be evaluated for the same things in the same ways and they are not; the program seems to be too loosely organized . . . a lot of changes back and forth." One student complained about confusion over what was required for an assignment or report. Another student felt the program " . . . needs a female instructor and more female students." There was also the perception that technological education students had more course-work requirements than general education students. First impressions of the program ranged from "shock" to "satisfaction". First round interviews showed that a few students found the transition, from working in business and industry to attending school, very difficult. "Courses [at The Faculty of Education] are set up for people who have degrees . . . some of us have a very different background and sitting down writing essays . . . we're used to practical things and concrete things and these are abstract ideas . . . why are we doing it anyway?"

One-third of the students felt that coming to the Faculty was " . . . almost like high school" and that the program was not responsive to students' interests and concerns. Their perception was that faculty members [foundation course professors primarily] undervalue the views and experiences of technological education students. There were also some negative comments about the teach-

ing approaches used. One participant felt fellow students in his panel were treated as if in a high school simulation.

George's Preconceptions

The connection between individual preconceptions and program impact was captured quite succinctly in the profile of George. George's attitudes, expectations, and concerns were shaped by his experiences in the "real world." As such, he viewed himself as a unique commodity (in a positive sense) entering an academic milieu. His model of teaching was based on his work experience and his own experiences as a student. He saw himself as a subject specialist whose vocation it was to train students for a job (as opposed to more liberal educative purposes). There was no evidence from the analysis of transcripts that George drastically changed his model of teaching in the eight months while at the Faculty of Education.

George continued to be immersed in most of the activities and relationships which he was involved with prior to teacher education. His place of residence was the same. He continued to work part time. He was surrounded by wife, family, and friends. All of these factors helped to entrench his views rather than alter them. Although he found some of the new ideas and ideals espoused by professors at the university appealing, there is no evidence to indicate that he bought into any of them.

George chose teaching by chance, a career which would enable him to enjoy a better life style. It appears that there was not enough in the curriculum of the technological education program that helped George to critically look at his values and beliefs on and about teaching and learning, and the assumptions on which they were founded.

Discussion

The above viewpoints represent a sketch of what investigators found during their interviews, through participant journals, and from pre- and post-survey instruments. Results from the study suggest the literature on the impact of teacher education programs may be more cynical than it need be. A well conceived pre-service teacher education program, one that considers student preconceptions about teaching, may hold promise for socializing technology teachers successfully into the classroom and the profession. The values, beliefs, and attitudes student teachers bring with them to teacher education, as Ginsburg and Clift (1989) found, can change when the dominant messages that teacher education programs send to students are critically examined and a program which addresses the broader needs of students instituted.

Probing the incongruent tendencies and aspirations of the candidates in the study proved equally revealing. Most technological education teachers leave

one career to move into another [teaching]. What the data reveal are that the experiences they [student teachers] had prior to teacher preparation, to varying degrees, influence their thinking on and about teaching and learning. In his book "A Place Called School" Goodlad (1984), states that " . . . teachers teach the way they were taught." The statement is true for technological education teachers with one caveat. Many aspiring technological education teachers are set on teaching the way they work. Inferences by students about the value of training students to be more skilled at specific jobs, point to the presence of the business and industry ideology. In some cases, work experience had a powerful impact on the teacher candidates' thinking. In other cases, factors such as hobbies, family, and involvement with community groups had a stronger influence. The power of student predispositions is evidence of the need for students to critically analyze issues related to the place and role of technological education in schools.

From another perspective the teacher candidates studied brought rich and varied experiences to their new career- resources which are an asset in terms of curriculum relevance and interpersonal skills. To what extent do these assets offset any liabilities in terms of socializing into a professional culture that is, very often, so diametrically opposed to the world of work? George is the most salient case in point. Are George's preconceptions an asset or liability? There is no clear answer. The knowledge, skills, and values that candidates bring with them to the teacher preparation process were firmly embedded in the personalities and value systems of the students in the study. Those experiences and attributes make socialization into the profession, as it is experienced by technological education teachers, problematic.

The evidence from the UWO study suggests a flexible and well-delivered teacher education program can help teacher candidates examine their predispositions and, in some cases, change them. Also, by virtue of completing the teacher preparation process, they [teacher candidates] can become effective entry-level teachers and eventually learn how to become contributing members of a school staff. The fact that eleven out of thirteen students committed themselves to the project suggests student reflection, experimentation, risk, and self-renewal, is more than possible for candidates who are flexible and dedicated professionally.

Limitations of Teacher Socialization Research

Atkinson and Delamont (1985) remind us to be watchful of patterns in teacher socialization for particular sub-groups of teachers and of the social and political contexts within which the socialization process occurs. Zeichner and Gore's (1990) comments on methodological and research design innovation, in teacher socialization research, are enlightening.

> The socialization stories of teachers of a particular gender, and of those who represent certain social-class backgrounds, generations, races, and so on, and of teachers who teach in particular kinds of settings will have many things in common despite the unique aspects of each account. In our view [Zeichner and Gore], researchers need to pay attention to both uniqueness and commonality in the socialization of teachers. More attention to the collective aspects of socialization and to the kinds of structural issues raised by studies conducted in the critical tradition could help correct the imbalance that has developed in the literature from overemphasis on individual stories of socialization and the lack of attention to institutional and cultural contexts in which socialization occurs. More attention, in particular, needs to be devoted by researchers to the ways in which race, social class, and gender mediate the socialization process and establish socialization patterns for particular groups of individuals who teach in particular kinds of schools (p. 341).

Viewing teacher socialization as an interactive process, that is, how teachers are shaped by and in turn influence the structures into which they are socialized, requires further attention in socialization research (Zeichner and Gore, 1990). While the study undertaken at The University of Western Ontario did not set out to explore these larger social and political contexts, investigators were thankful that the teacher socialization literature to date had articulated the research design terrain. More helpful explanations of pre-service program impact concerns and the ultimate effectiveness of program adjustments would at least be possible.

Zeichner and Gore's (1990) warning about study results in teacher socialization research is most appropriate in the field of technological education. Using a lateral thinking process, one might well ask the question: Into what are technological education teachers being socialized? Perhaps the reason teacher socialization research is not as liberating as it could be is because schooling, as a system, is itself aslant. Experience in teacher education for technological education teachers suggests that socialization into the subject subculture is relatively smooth. Could it be that the disparity between the more conventional school subject subcultures, that is, mathematics, English, history, and the more applied technological specializations, makes socialization into the larger school culture problematic for technological education teachers?

The Need for Further Research

While much understanding and insight with respect to the socialization of technological education teachers was achieved in the teacher development project, there is much more to learn. The confusion some students experienced with respect to their "role" and the impact of dramatic changes in the world of technology, are important variables to be explored.

The intention in case study research is to increase insight and understanding. Subsequent research to explore other dimensions of technological teacher socialization, is now needed. The extent to which innovative and meaningful teacher education curricula, i.e., learning activities organized around teacher candidate preconceptions, make a difference, is also a rich area for further study. If learning to teach is a transformative process, as Feiman-Nemser (1990, p. 227) suggests, teacher educators need to remember that becoming a teacher is not just a matter of acquiring new knowledge and skills. Because prospective teachers are no strangers to classrooms, re-socialization is necessary, especially if new ways of teaching are to be fostered, and socialization into a new professional culture of education is to occur.

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