

## Cohort Grouping and Preservice Teacher Education: Effects on Pedagogical Development

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This study sought to evaluate the socializing effects of cohort grouping on elementary teacher candidates. The research took place in the context of a curriculum consisting of art, drama, music, physical education, and child psychology, with instruction emphasizing a collaborative, thematic approach to teacher education. The curriculum was unified around a central theme, the learner; methods and content were taught simultaneously. The results showed that independently of cohort membership, small class sizes and the collaborative thematic approach produced a strong socializing effect. Belonging to a cohort, however, resulted in earlier socializing effects and evidence of emergent collective beliefs. Importantly, the curriculum was particularly effective at promoting *pedagogical content knowing*, helping many students to examine their beliefs about teaching.

Cette étude cherchait à évaluer les effets de socialisation du regroupement par cohortes des candidats à l'enseignement au primaire. La recherche s'est déroulée dans le cadre d'un programme d'études comprenant des cours d'arts plastiques, de théâtre, de musique, d'éducation physique et de psychologie de l'enfant, l'accent étant mis sur la collaboration et une approche thématique de la formation à l'enseignement. Le programme adoptait, comme thème central, l'apprenant; les méthodes et le contenu étaient enseignés simultanément. Les résultats ont démontré qu'indépendamment des membres de la cohorte, les classes plus petites et l'approche thématique faisant appel à la collaboration produisaient un plus grand effet de socialisation. Le fait d'appartenir à une cohorte, toutefois, accélérail les effets de socialisation et l'émergence de croyances collectives. Fait à souligner : le programme d'études réussissait particulièrement bien à promouvoir la connaissance du contexte pédagogique, aidant ainsi un grand nombre d'étudiants à analyser leurs croyances au sujet de l'enseignement.

In many universities, the educational journey of teacher candidates is characterized by a sense of isolation and an individualistic outlook (Goodlad, 1990; Su, 1990). The experience of professional socialization is undergone by a random collection of disassociated individuals rather than by a close-knit and caring group (Su, 1990). This trend persists despite recognition that resocialization is necessary if new ways of teaching are to be fostered in students who are no strangers to the classroom (Feiman-Nemser, 1990). Indeed, beliefs about teaching are well established by the time students get to college (Lortie, 1975; Pajares, 1992), and various explanations have been advanced to account for their embeddedness (Feiman-Nemser, 1983). The current focus of teacher socialization

research is on ways to alter dysfunctional preconceptions about teaching rather than on uncovering patterns of origin (Zeichner & Gore, 1990). From the latter viewpoint, there is currently some evidence that collaborative, thematic, cohort programs offer the best opportunity for identifying and reconstructing entry-level candidates' misconceptions about teaching (Barnes, 1987; Pajares, 1992; Rodriguez, 1993; Weinstein, 1988).

The Piagetian-based Developmental Teacher Education program at the University of California at Berkeley (UCB) involves a relatively small cohort of about 15 students. Faculty share a fairly cohesive philosophy and theoretical perspective, which underlies the course work in theory, foundations, and methods classes. Hence problems of "ideological eclecticism" and "structural fragmentation" are minimized (Levin & Ammon, 1992). At Michigan State University (MSU), in addition to a standard curriculum, alternative programs with distinct themes are offered to cohort groups in a deliberate attempt to help students develop complete, well-organized, and stable teaching schemata. The themes provide clear direction for structuring the programs so that agreement between faculty occurs at a very specific level. Students choose the alternative programs because these programs fit their beliefs about teaching and because they want to learn more (Howey & Zimpher, 1989). The UCB and MSU teacher education programs share the philosophy that "Programs for the education of educators must be characterized by a socialization process through which candidates transcend their self-oriented student preoccupation to become other-oriented in identifying with a culture of teaching" (Goodlad, 1990, p. 59).

In collaborative and thematic teacher preparation initiatives such as those at UCB and MSU, as well as more recent instances at the University of Illinois at Urbana-Champaign (Graber, 1996) and the University of Calgary (Hunsberger, 1999), cohort groups are an integral part of the program design. A cohort can be defined as a group of people who stay together from beginning to end of a program and grow through the process, experiencing essentially the same stimulus material and challenges of the work environment (Goodlad, 1990). Yet, there is a paucity of "significant" research or in-depth information about the advantages and disadvantages of cohorts in educational settings (Packard et al., 1995). Goodlad (1990) found few instances of the deliberate use of cohorts in U.S. teacher education in 1987-1988. He found that students in teacher education programs lacked a sense of cohesiveness; any efforts to form cohort groups were usually initiated by individual faculty members and were short-lived.

The limited use of cohorts in teacher education programs persists despite recognition that they can be a powerful source of socialization for prospective teachers, "enabl[ing] one another not only in academic but in a more personal and psychological sense as well" (Howey & Zimpher, 1989, p. 249). Thus, at Kent State University (1989), cohort groups evolve into learning communities, taking on lives of their own; at the University of Wisconsin-Madison, they foster emotional support and teaching ideas (Wisconsin Center for Education Research,

1988); and at the College of St. Thomas, they capitalize on the varied backgrounds that prospective teachers bring to their own education (Warring, 1990). In Canada, a small-group format in a teacher education course at McGill University (Shapiro, 1996) and “base support groups” (long-term co-operative groups) in an elementary teacher program option at the University of Toronto (Rolheiser & Hundey, 1995) promote collegiality and collaboration.

In each of the preceding examples, it is difficult to evaluate the effects of cohort grouping independently of class sizes, faculty consensus, and thematic impact. Such program features alone may produce close social groupings, obviating the use of pre-selected cohorts. This hypothesis was tested with elementary student teachers attending the B.Ed. program at the University of Victoria in British Columbia and enrolled in a core curriculum consisting of multiple-section methods courses (art, drama, music, physical education) and a child psychology course. The analysis we present here is part of a larger study of the effects of cohort membership on these teacher candidates. We have previously discussed the first year of this project (Mather & Hanley, 1996). Here we report the results of Year 2, which were similar to those of the first year.

All undergraduate elementary student teachers at the University of Victoria are required to take one course in each of art, drama, music, physical education, and child psychology in Year 2 (the initial year in the Faculty of Education) of the B.Ed. program. Post-degree students take these courses in the first year of a two-year program. The instructors in these courses often work together to help students perceive connections among the disciplines. The faculty in the study we discuss in this article coordinated their efforts around the theme of the learner—the student as learner, the child as learner, and the student as emerging teacher. The faculty expected that teacher candidates would acquire a better understanding of the developing child as a learner and the value of the arts in this process by engaging in the course material as learners themselves. The focus necessarily involved simultaneous teaching of content and methods.

#### METHOD

##### *Subjects*

An experimental cohort of 24 students (H) was compared with a control group of 14 students (C) who took the same core courses as students in H but not all in the same sections and who, therefore, did not travel together during their studies. We also analyzed 6 post-degree-program students (P) who took three core courses (art, music, and physical education) and formed a “natural cohort” in that they preferred their own company, and 5 “outsiders” (O) who took no more than two core curriculum courses and who also had minimal opportunity for shared experiences. Characteristics of these groups are shown in Table 1. Membership in the experimental cohort (H) was voluntary and offered through phone contact.

TABLE 1  
*Description of Comparison Groups*

<i>Group</i>	<i>Number of Students</i>	<i>Age Range</i>	<i>Core Program Participation</i>
H Experimental cohort	24	19–23	4 courses
C Non-cohort control	14	19–23	4 courses
P Post-degree natural cohort	6	23–35	3 courses
O Non-cohort outsiders	5	19–23	2 or fewer courses

As the course load of students in the C group closely resembled the load of those in the H group, interviews with these two groups of students provide the most direct comparison of the effects of cohort membership. As well, the C and H groups involved students of approximately the same ranges of age and educational level. We examined interviews with members of the O group to evaluate the combined effects of non-cohort membership and limited participation in the core curriculum, trying to isolate general effects of such elements as experience of smaller classes and quality of instruction. Finally, interviews with members of the P group provided the contrast of a group of older students who tended to stick together as a cohort because of their age and educational status.

#### *Procedure*

Interviews lasting 15 minutes were conducted in November and March by a research coordinator not involved in the course delivery.<sup>1</sup> The following questions, based on scales used for the quantitative analysis component of the study (Dyson & Hanley, 1998; Dyson, Hanley, & Miller, 1997), were posed:

1. Discuss your level of satisfaction with your courses.
2. Discuss the atmosphere in your classes.
3. How would you describe your relationship with your peers? Your instructors?
4. Give an example of how you use what you learn in one class in another class. Does this connection-making happen often?
5. Do you think that what you are learning is helping you to become a good teacher?

The interviews were first categorized using open coding techniques, a process that breaks down, examines, compares, conceptualizes, and categorizes data (Strauss & Corbin, 1990). After categories were established with open coding, the data were reviewed and categories rearranged using axial coding (Strauss & Corbin, 1990) to identify connections between categories. Prior knowledge of

research on cohort grouping with students (Barnett & Muse, 1993; Reynolds, 1993) and the social environment of adult classrooms (Darkenwald, 1987) tempered the inductiveness of this process (Miles & Huberman, 1994).

### *Data Analysis*

The coding resulted in two main categories, each with its own subcategories, as listed in Table 2. Within this categorical framework, we first examine effects that were largely independent of pre-selected cohort membership, then turn to differences specific to the two cohorts (H and P). Finally, we highlight differences between the November and March responses.

## RESULTS

### *Cohort-Independent Effects*

In applying the categorical framework shown in Table 2 to assess the impact of cohort grouping on students, it quickly became apparent to us that two interactive influences—small class size and teaching approach—had a strong socializing effect on all groups, independent of formal cohort membership. We examine these effects first to establish a ground against which figure effects of the H and P cohorts may validly be assessed.

Two excerpts from the interviews with non-cohort students are representative of the general appreciation of the relatively small class sizes (20 to 30 students) in the Faculty of Education:

It's comfortable, especially in the Education classes. They are smaller. In a big lecture you don't get to know the people. [O]

I'm very shy. The class size here is so good. Class size is involved here. I was relieved when I saw class sizes; I've made friends with a lot of people. [C]

TABLE 2  
*Categories and Sub-categories from the Interview Data Analysis*

<i>Relationships</i>	<i>Personal Development</i>
<ul style="list-style-type: none"> <li>• sense of comfort</li> <li>• support (instructor, peer)</li> <li>• friendship making (affiliation)</li> </ul>	<ul style="list-style-type: none"> <li>• pedagogical content knowledge</li> <li>• group dynamics</li> <li>• sharing/competition</li> <li>• participation</li> </ul>

The small class sizes were seen to facilitate friendship-making as well as to enable the professors to create a comfortable learning environment. Instead of complaining there was no place to hide, students expressed a sense of well-being. This effect was less evident in the O group, who took fewer Education courses.

The profs have made me feel comfortable. I'm not good at going up in front of everyone. Knowing everyone helps too. [H]

Classes are smaller. It was intimidating to speak out last year. Teachers encourage it more here. Instructors are very human. They treat us as people. [C]

I probably talk more this year than previously [in class] — maybe it's the smaller classes? Cooperation and approachability are emphasized. [P]

I wish I were in more of the Education program. The people I know in Education seem to be doing well. [O]

Students' participation in program activities was also linked to the quality of instruction they were receiving.

The teachers seem to be preparing me well. They're practical and yet have theory. They're eager to see development in their students and are ready to help. [H]

The instructors make the difference. They make it fun to learn. They are enthusiastic. The content and objectives were clear by the end of the year. [C]

Convivial [instructors]. I find them all to be open, helpful. They seem committed to their subjects areas. [P]

For the majority of the profs there's a high level of energy. They feel passionate.... We're learning things we don't know in a "community of scholars" environment. [O]

In part, this high regard for instructors stemmed from a unified teaching approach that produced a sense of coherence and cohesiveness characteristic of successful thematic programs (Barnes, 1987). As one "outsider" put it: "From what I hear, students think there is a theme building up, a whole way of thinking, how you teach a child." Several "insider" comments attested to the accuracy of this perception.

We have wonderful teachers. They make me excited to learn. They talk in terms of the little people. They give me tips so I'll understand how to deal with children. . . . I'm starting to think at the child's level. It's fascinating. They [the children] will be learning from me at this level. [H]

In drama, I learn as a child and an adult. [C]

It's neat to be in the child's position [e.g., in music and physical education]. [P]

What these student teachers were enjoying was a special blend of content and pedagogy known as pedagogical content knowledge (Shulman, 1986). That is,

they were learning ways to conceptualize and represent commonly taught topics in a given subject, as well as gaining an understanding of what makes learning these topics difficult or easy for students of different ages and backgrounds (Wilson, Shulman, & Richert, 1987). More precisely, consistent with the active-learning or constructivist perspective that the foregoing interview segments portray, the term *pedagogical content knowing* (PCKg) (Cochran, De Ruiter, & King, 1993) may apply to how and what students were learning:

PCKg enhancement requires the modeling and sharing of teaching decisions and strategies with students . . . and learning must be situated in a context like the ones in which these understandings will be used. . . . [Student teachers] must develop their pedagogical knowledge in the context of two other components of teacher knowledge: teachers' understanding of students and of the environmental context of learning. (p. 266)

The PCKg concept seems to encompass the type of learning being experienced in the core curriculum. For example, instances of instructor modelling and sharing of decisions as well as strategies were not difficult to find in the interview protocols.<sup>2</sup>

Teachers I've had have demonstrated, as master teachers, what a good teacher is. It rubs off. [H]

Professors have been open to adaptations and suggestions. They have actually shown me and got me to say how what we are learning applies to the classroom. [H]

[The instructors] are open to suggestions and comments about how things are going. There is a more equal relationship. They aren't just spewing information at us; therefore it is easier to comment. You know what you say will be accepted. [C]

I've learned a lot. I realize what I don't know—the hallmark of a good Education program. . . . It's mostly the work I have to do [that gets to me]—not the profs, who really model well. They're patient with us. [P]

Generally, the interview responses reflected the instructors' proficiency with the four major components of PCKg: an integrated knowledge of subject-matter content, student characteristics, instructional strategies, and the environmental context of learning (Cochran et al., 1993; Fernandez-Balboa & Stiehl, 1995; Grossman, 1990).

As noted earlier, the creation of an effective learning environment was aided by small class size. However, it was also promoted by the instructors' success at integrating material across course boundaries. Students did not have to remember whose class they were in so as to adapt to the particular professor's views, a situation known to result in cohort unrest (Goodlad, 1990). PCKg development cannot occur in a single course; it requires repeated experiences that deliberately promote simultaneous learning of its components (Cochran et al., 1993). Concerning the integrative aspects of the learning, the essence of the

responses of many participants in our study is perhaps best captured by a comment about the Wellness and Sport Studies teacher education program at the University of South Florida, a program that strongly influenced students' beliefs about teaching and learning: "There are certain principles that our students hear so many times from so many of us that they adopt them. They're brainwashed" (Graber, 1996, p. 463). The students in our study explained:

As the year went on I started to realize how I can take something from one class into another class. All our teachers pointed out connections—made us aware of the possibilities. Repetition did it. [H]

All the subjects interconnect . . . the ideas get into your mind. How could I use this in . . . ? [H]

In a lot of my lesson plans I'll get an idea from another class. Teachers loved to hear that. They like it when you put things together. It happens all the time. [C]

Because of the way the program is organized you are forced (it happens naturally) to integrate your courses. [C]

It's easy to integrate one lesson into another. Music is the one I infiltrated in other subjects. [P]

I see overlap. . . . It all comes together. [P]

Some overlap is useful. We are not hearing it too often. [O]

Only in the responses of the Outsiders was connection-making not evident, possibly because of their limited exposure to the core curriculum.

Instructor modelling of decision-making in group settings provided learning experiences that fostered co-operation rather than competition.

Here, you share. Learning involves sharing. I've always been competitive about marks. I'm not completely there but I'm beginning to share. I'm growing. Two heads are better than one. [H]

We are not less competitive, but people are willing to help each other. This helps relax everyone. It's not a case of "I'm getting a higher grade than you." [C]

If the prof is open to discussion and group work, there is more sense of sharing and cooperation. [O]

### *Cohort-Specific Effects*

The design of the core curriculum program provided the non-cohort control group (C) with many features characteristic of pre-selected cohort programs—that is, relatively small class sizes, group activities, and a comfortable learning environment. Therefore, cohort-specific effects showed up more as differences in intensity than in the nature of the experiences. For instance, affiliation in the



experimental (H) and natural (P) cohorts was facilitated by both the emphasis on small group collaborative projects and belonging to a group that stayed together. This “double exposure” seemed to contribute to certain group dynamics conspicuously absent in the C and O groups. Thus, some members of the H and P groups found it stressful to interact together so frequently.

Everyone gets along really well. It’s nice spending that much time, but I sense tension now. There’s too much time together. Some are getting sick of each other [in the last month]. [H]

The atmosphere between students had its ups and downs. Once you got to know someone, points started annoying you. It ended up good. [H]

Sometimes we get on each other’s nerves but in the end we’ll all be friends. We’ve stuck together. [P]

Unlike members of the P group, who had no other age/stage peer comparison, H members were able to contrast their lot with members of the C group in deciding whether they would choose to continue in a cohort the following year. In general, the members chose to continue, but only if a new group were formed so that new people and ideas would be encountered. Positive reasons they cited included emotional and academic support, friendship-making, and the work ethic created by a cohort. Negative comments centred around competition and group dynamics, an interaction evident in other cohort studies: “Competition problems arise in cohorts because the idea of sharing resources and helping each group member to achieve her/his goals is often incompatible with traditional concepts of grading” (Barnett & Muse, 1993). In our study, some cohort members’ lack of contribution appeared to cause competitive discord:

It’s got more competitive—not so much for marks, but “I’ve done it and I’m not going to give it to anyone else.” [H]

Disagreements sometimes made it more and more difficult for group work. There were keeners and slackers who didn’t pull their load—as in most classes. [H]

Some in the group need a lot of work before they become teachers. They’re always late and don’t study. [H]

The dynamics of a cohort can result in the group’s seeming united against a professor. Radencich et al. (1998), in an elementary and early childhood pre-service teacher education cohort study, identified this behaviour as scapegoating or blaming the teacher for group problems. We found that this dynamic polarized the H group over disagreement about one instructor’s teaching efficacy.

The students’ social feeling was positive, but there was a tendency for it to become mob psychology. Vocal peers would lead the effective response of the class. Those who

disagreed said nothing because of the dynamics. This worked to our detriment in a couple of courses. Once “it was decided” that a course was not effective, or an instructor was ineffective, then a lack of respect would be evident, and leaders would expect others to follow [their lead]. These individuals would speak out during the class and spread dissent. [H, older student]

We’ve been called a gang by professors. We tend to share a lot of openness about a prof and do approach a class with less respect. . . . It’s always the same people who do the talking. It’s frustrating — the lack of cooperation. There was a split. [H]

People have misjudged the prof — a collective-type judgment. That’s what you get from a cohort. That can sometimes be a not good thing. [H]

It is an acknowledged challenge of cohort groups that they tend to be more vocal about the quality of teaching and the relevance of course material (Barnett & Muse, 1993); this aspect may have been intensified because of the H group’s youthfulness.

I’m only 23 but I’m one of the oldest. I find the immaturity surprising. The cohort [members] became comfortable and acted like kids again. They became responsible adults when other [outsiders] were there. There have to be boundaries. That’s a large concern. [H]

By the end of the year I wanted to do something by myself — not compromise my own values. . . . It’s been difficult for the profs also. We’re very chatty. Voices go up. Calming down takes time. We’re like a bunch of 7- and 8-year-olds. [H]

Better [peer relationships] with the PDP [group] than with the kids [H group]. I fit in better with the latter, but sometimes feel wiser. [O, older student]

Interestingly, the P cohort did not experience problems with slacking off, competition, or group dynamics. Perhaps at this age and academic level, non-contributors have been selected out and the locus of control is more internal (Korthagen, 1988), resulting in less competitiveness and greater collectivity. Alternatively (or additionally), the group dynamics may have been less intense. That the H group may have seen itself to be special also cannot be overlooked as a contributing factor. Closeness of social grouping, although conducive to destructive interaction, can nonetheless serve as a powerful source of socialization in more positive ways (Howey & Zimpher, 1989). An important question (not resolved by our data) is whether the H cohort’s relative immaturity made them more susceptible than the P cohort to “brainwashing,” constructive or otherwise. It is well established that, with few exceptions (e.g., Graber, 1996), most teacher education programs have very little effect on entry-level preconceived beliefs about teaching (Foss & Kleinsasser, 1996; McDiarmid, 1990; Weinstein, 1990). It is unlikely that such preconceptions become easier to change with age.

*November–March Response Differences*

According to the November analysis, the H and P cohorts experienced more peer support and friendship-making than did the controls. This difference was not apparent in the March responses. Instead, the C group had reached about the same stage of affiliation in March as had the H group in November. Apparently, by March the core program had fostered the development of a cohort-like learning community in the control group through the program's emphasis on cooperative classroom activities and conceptually integrated instruction. In turn, the H group students had become more discriminating in their friendships.

Some of the people I hung around with at the beginning of the year bug me now, and vice versa. [H]

It's funny how it progresses over time. You start out working with someone then find out you're not as compatible as you thought, and some people you didn't work with turn out to be better. [H]

Very cooperative and friendly [peer relationship]. It's developed more since Christmas. [C]

Fine [peer relationships], especially after the second term. You know people better. [C]

In contrast, the O group showed little change in this respect.

For me, it's more "Hi, how are you?" because we are taking [some of] the same classes. Nothing more. [O]

The other main difference between November and March responses, more confidently articulated by the H, C, and P groups, were expressions that reflected a dawning construction of pedagogical content knowing (PCKg).

I see the point of the activities we were doing where earlier I thought there was little use. Now I have a basis to go on. [H]

I'm more confident about where I'm going. It's overwhelming. It's opened my eyes to the many dimensions of teaching. There is so much to learn. [H]

Now I see a bigger picture; things are fitting together. I see it all. I'm focused on actual teaching rather than assignments. [P]

I'm starting to realize how it all fits together. I feel as if I'm going to be a good teacher. It's exciting—but I'm also getting tired. [O]

## DISCUSSION

We set out to evaluate the socializing effects of cohort grouping on prospective teachers in their initial year in an Education program. We found that independent

of membership in a formally-recognized group, two interactive elements — small classes and pedagogical approach — promoted feelings similar to those produced by being part of a cohort. The interview responses constituted a wealth of evidence of collaborative and thematic impact, even in the non-cohort control group. Curricular overlap, unified teaching approaches, and frequent group activities were instrumental in fostering a sense of community or cohesiveness. No one in the control group experienced the year in an isolated or individualistic manner.

Only members of the H cohort group, however, showed evidence of emergent collective beliefs, although those beliefs were inconsistent with the smooth functioning of one course. It seems likely that this same tendency towards group consensus was a positive co-opting force in other courses, supporting faculty efforts to facilitate the development of pedagogical content knowing (PCKg). For example, Graber (1996) observed that students who initially resisted the orientation of the teacher preparation program at the University of Illinois at Urbana-Champaign were often co-opted by peers who had been persuaded of the program's efficacy. In our study, superlative remarks about the class atmosphere such as "lots of enthusiasm," "all worked hard," "participation," "group effort," "cooperation," "supportive," "inclusive," "enjoyable," "fun," "intriguing," "challenging," "trusting," "comfortable," and "outgoing" were expressed more often by participants in group H than by those in group C. Unfortunately, it is difficult to measure validly the effects of such experience on student teacher cognition (Kagan, 1990). For instance, a number of faculty felt that the H cohort was less focused on academic matters than were students in other classes — these faculty saw the social dimension of the H group as impinging on academic focus, although less so by the end of the year. If socialization is a prerequisite for belief-change, this digression may be a price that has to be paid, at least in the short term.

As exemplified by the behaviour of the H group in one course, student cohorts tend to be more vocal than traditional students about the quality of teaching and the relevance of course materials (see also Barnett & Muse, 1993). This was true also in the previously mentioned study of an elementary and early childhood preservice teacher cohort, where one student commented: "We had two situations where . . . we had weak professors, and they pretty much got chewed up and spat out" (Radencich et al., 1998, p. 120). This is perhaps the mixed blessing of cohorts: they tend to reveal students' perceptions of programmatic strengths and weaknesses, perceptions that without group support may be hidden behind behaviours such as fronting — that is, playing the game of doing what students think professors want them to do (Perry, 1970). In our study, however, faculty consensus and collaboration on the program theme generally left little room for student confusion about the curriculum's goals. This alone was sufficient to create a learning community in the control group, and it must have affected the behaviour of the experimental cohort just as strongly.

One limitation of our study is that the results cannot be generalized to other subject areas in teacher education. That is, a curriculum of art, drama, music, and physical education offers unique advantages for altering students' belief systems about pedagogy because most teacher candidates have not been exposed to extensive instruction in these disciplines.<sup>3</sup> This is not the case in such disciplines as mathematics. For example, Foss and Kleinsasser (1996) found that preservice teachers' conceptions of mathematics remained constant throughout the duration of their pedagogical instruction. They concluded that their conceptions would remain fixed unless an ethos were created where attention to teacher candidates' beliefs was in the forefront. Such an ethos pervaded the program on which we here report. It would be interesting to study the impact of the Year 2 component on professional growth in subsequent years of the program.

Our results bring into question the British Columbia College of Teachers' 1997 Bylaw and similar reform initiatives that effectively segregate academic courses (presenting content) from pedagogical classes (presenting methods) rather than encouraging the integration of these courses (Hanley, 1998). Pedagogical content knowing (PCKg) requires integrative experiences of content and methods in contexts similar to classroom environments (Cochran et al., 1993). This type of knowing was precisely what students gained in the core curriculum program; it was helping to confirm these students' images of themselves as teachers—a step that may be vital to future progress (Kagan 1992). One direction for future research is to determine whether it is indeed possible to affect student teachers' preconceived beliefs in programs that divorce subject matter from pedagogy.

The main implication of our study is that it may be impossible to evaluate the advantage of cohort grouping independent of program design. The limited use of cohorts in teacher education may have mostly to do with program factors such as ideological eclecticism and/or structural fragmentation. Under the latter conditions, and given the vocal nature of cohorts, such cohort-grouping initiatives are unlikely to survive. In essence, student teacher cohorts probably work best when a cohort of teachers simultaneously collaborates on a specific and significant thematic approach, as occurred in our study.

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#### NOTES

<sup>1</sup> Lily Dyson and Betty Hanley coordinated this research project, with Dyson handling quantitative measures and Hanley collecting the qualitative data.

<sup>2</sup> The connectedness of our analysis to existing theory such as the concept of PCKg (Cochran et al., 1993) and thematic programs (Barnes, 1987) speaks to the question of validity.

- <sup>3</sup> However, many teacher candidates have to overcome a belief that they lack sufficient talent in art, drama, or music (Asmus, 1985, 1986; Nicholls, 1984). Campbell (1998) summarizes the devastating effect of the widespread belief in talent in the western world: "This Eurocentric concept of musical talent evokes thoughts of Mozart, the wunderkind, composing at five and performing in the grand European courts as a schoolchild. It creates an image of musical participation for the very few" (p. 169). Talent is a construct that arts educators are attempting to deconstruct.

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