When Two Heads are Better than One: Beginning Teachers' Planning Processes in an Integrated Instruction Planning Task

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When Two Heads Are Better Than One: Beginning Teachers' Planning Processes in an Integrated Instruction Planning Task

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Planning is a fact of life in the professional work of teaching and a curricular mainstay in teacher preparation. Indeed, making a lesson plan marks an important shift from thinking like a student to thinking like a teacher in most teacher education programs. Yet, although studies of teachers' thinking over the past 20 years have dislodged the rather restrictive Tylerian view of instructional planning (Clark, 1983), providing a more realistic view of its complexity (Morine-Dershimer, 1979; Yinger, 1979), planning processes in teachers' work remain obscure. Methodological difficulties coupled with a limited use of a constructivist perspective in studies of planning account to some degree for the slim knowledge base in this critical area of professional work (Borko, Livingston, & Shavelson, 1990; Clark, 1983; Neisser, 1968; Shulman, 1986).

Information pertaining to teachers' planning processes has indirectly emerged from research on novice-expert differences in instructional performance and problem solving (e.g., Carter, Cushing, Sabers, Stein, & Berliner, 1988; Leinhardt, 1986). In an investigation of the nature of pedagogical expertise, Borko and Livingston (1989) examined student and experienced teachers' planning, teaching, and post-lesson reflections from cognitive and improvisational teaching frameworks. They noted several similarities between novice and expert teachers' planning. Both created mental plans or agendas for their lessons; they incorporated flexibility with respect to instructional elements (e.g., pacing) and included considerable detail in their schemes. Yet the processes by which the student teachers created their plans appeared quite different from those of the experienced teachers. Where experts engaged in long-range planning, the novices' approach was more short-term in nature, focused on preparing for tomorrow. The novices understandably characterized their planning as time-consuming, as they struggled with decisions about what content to cover. Experts, on the other hand, kept a general plan of instruction in their heads, leaving detail level decisions for just prior to or during the act of teaching. The novices also experienced considerable difficulty in making predictions about students' responses, which left gaps in their plans that inevitably required adjustment during teaching, adjustments they often failed to make in their effort to stick to the plan. Summarizing, Borko and Livingston (1989) hypothesize that novices' cognitive schemas were less elaborated and their pedagogical reasoning skills less developed than those of expert teacher, suggesting that novices may not have the requisite knowledge and skills to utilize the complex teaching and planning patterns of an expert.

Studies of teachers' problem solving reveal novice-expert differences in pedagogical reasoning with implications for understanding planning processes (e.g., Berliner, 1986; Housner & Griffey, 1985; Kennedy, 1987). Drawing on novice-expert studies in different fields (e.g., medicine or physics), one can speculate that experienced teachers form more comprehensive representations of instructional problems than do novices, who tend to define them more literally, an observation borne out in Borko and Livingston's (1989) analysis of novice teachers' planning patterns. Swanson, O'Connor, and Cooney (1990), using information processing analytic techniques, took a detailed look at novice-expert problem solving in relation to classroom discipline problems. They asked preservice and experienced teachers to think aloud about a series of classroom situations and state decisions for each. Manipulating the instructions (directive vs. nondirective) for reading vignettes,

they produced one condition where teachers were directed to focus on literal information for problem solution, and another less prescriptive, thus allowing for greater individual interpretation.

Observations indicated that locus of mental effort differentiated novice-expert problem-solving processes. Where experts allocated strategies and skills to understanding the problem, novices directed their mental energies to finding a solution, preferably quickly. Although both shared several common problem-solving routines such as identifying and evaluating information, experts used strategy routines more often and gave preference to those that led to problem definition. As a result, their representations of the problem were more complete than the novices, perhaps more likely to produce the desired results with minimal adjustment and repair once enacted. Further, the data revealed that variations in conditions did not dramatically influence the experts' problem solving. They still produced more qualitatively complete representations of the problem than did novices, perhaps because of their store of declarative knowledge.

Information-processing research informs the study of teachers' planning processes in at least two ways. First, it reveals strategies characterizing expertise, thus supplying information that potentially guides the teaching of planning skills in professional education. Second, it sheds light on differences in novice-expert reasoning, which contributes to a developmental understanding of planning as professional activity. Novice-expert studies, however, have tended to cast features of expert thinking in high relief in an effort to identify the characteristics of expertise. Knowing how experts think and act, it is thought, will provide patterns of activity that novices might adopt, although it is doubtful that the development of expertise consists of such leaps. Understanding novices' thinking in practical planning activity is essential if they are to become expert instructional planners.

The social processes that certainly influence the development of planning abilities in practical teaching contexts cannot be ignored. Teacher planning has generally been perceived as an individual and solitary endeavor. Yet recent research from a sociocultural perspective suggests that social interactions provide planning models and procedures supporting development of individual planning strategies and skills (Gauvain & Rogoff, 1989). The extent to which novices are involved in planning with peers and more experienced teachers has implications for their individually developing planning strategies and skills.

In this study, I focused on beginning teachers' planning processes as they engaged in an integrated instruction planning task. Given current emphases on interdisciplinary curriculum (e.g., Wolk, 1994), integrated instruction offers a timely and challenging planning problem. Most studies of teachers' planning have utilized traditional instruction situations where a detailed plan is provided in the teacher's guide (Clark & Peterson, 1986). In these cases, the planning problem is well structured with action steps clearly specified; only the solution is unknown, that is, how to implement the plan in a given situation. With the problem neatly packaged, the emphasis is on the plan or solution, not on grappling with planning as a problem to be solved. As a result, memory and retrieval strategies are exercised over generative and analytical thinking processes (Covington, 1987).

Integrated instruction presents a more complex problem type in that it shifts planning activity from executing a prescribed plan (as outlined in a teacher's guide) to formulating one for a specific group of children in a specific classroom at a specific point in time. In this case, effort must be directed to understanding and representing the task, that is, bringing structure to it, so a solution or suitable plan matched to local classroom conditions can be made. Planning for integrated instruction is demanding in terms of pedagogical knowledge, critical-thinking skills, and problem-solving strategies.

In addition to describing novice teachers' thinking processes when they confront an integrated instruction planning task, I explored variations in their decision making and strategic activity in independent and collaborative planning contexts. Recent studies examining the effect of shared problem solving on teacher development suggest that well-timed opportunities for joint work and problem sharing may support the integration of procedural and practical knowledge in individual teaching behavior (Roskos & Walker, 1994). Other research points

to the potential benefits of peer interaction in the development of novices' strategies and skills that approximate more sophisticated patterns of problem solving (Baker-Sennett, Matusov, & Rogoff, 1993).

A focus on beginners' processes in an instructional planning task is important for several reasons. Descriptive observations of novices' thinking in different problem-solving situations lay the groundwork for the specific practices and instructional techniques that might support and advance the development of planning expertise. How novices think about what they do informs understanding of teachers' cognitive progress as well as efforts to facilitate cognitive development through teacher education.

Method, Participants, and Setting

I drew data for this study from a larger investigation examining two novice teachers' planning activity in an integrated curriculum approach to literacy instruction (Roskos & Neuman, 1995). This research involved two beginning kindergarten teachers, both females about 22 years of age, in their first year of teaching. Although their college coursework had prepared them to teach beginning literacy based on psycholinguistic theory and emergent literacy research (Weaver, 1994), the school district required them to teach traditional reading readiness using the Alpha Time Program (Weimann & Friedman, 1988) and handwriting. Both taught in the same building in similar classrooms and each instructed about 46 ethnically and socioeconomically diverse (87% Caucasian; 12% African American; 1% Russian & Chinese) kindergartners. Their respective kindergarten programs consisted of half-day sessions that served approximately 23 children in each session.

Description of Planning Task

The integrated approach reflected a constructivist view of primary education, advocating the use of themes or topics as organizing elements for literacy instruction. Drawing on integrative models (Katz & Chard, 1989) and related curricular concepts (Taba, 1962), it incorporated four key ideas into instruction: a topic-centered approach to early learning, featuring interesting investigations for young children to explore, for example, animals, seeds, toys; the organization of instruction around knowledge to be gained, processes to be learned, and dispositions to be developed; ample small-group and shared activity; and repeated opportunities to experience important ideas firsthand, individually, and with others. Children might embark on a guided investigation of ants and through a coordinated series of whole- and small-group activities develop concepts about insect life through a study of ants' behavior, habitats, eating habits, and body structure; extend their repertoire of speaking, writing, reading, and listening abilities by engaging in research activity; and expand their appreciation of living things through inquiry.

Planning for instruction using this approach represented an ill-structured problem, one that required planners to go beyond information given (e.g., teacher guides) to structure a solution and to apply problem-solving strategies in an ill-defined situation (integrated instruction). It posed a design problem that necessitated making a workable plan while dealing with many variables and constraints, some obvious and some discovered in the process of putting the plan together. It required what Schön (1987) refers to as *professional artistry* in a situation of practice: the need to use one's abilities to frame problems and shape solutions that fit existing understandings and conditions. This entailed creating and envisioning the flow of integrated instruction in a specific classroom setting and bringing it into reality in the form of a plan for action.

Procedures

The two teachers volunteered to use the integrated approach in their kindergarten classrooms, organizing instruction in science, social studies, and literacy around topic studies geared to the interests of the young child. For school policy reasons, mathematics remained a separate subject, although mathematical processes were included in plans for integrated instructional activities.

To develop familiarity with the approach, the teachers participated in four training sessions over a 2-week period, totaling 8 hours. Each session followed the same format: reviewing

planning goals; discussing planning steps (select topic, construct instructional framework, develop activities, prepare environment, and make provision for children's contributions); examining descriptive examples; and practicing different aspects of the planning approach such as determining instructional goals of a topic study. The teachers were also provided with reading selections describing the rationale for integrated instructional approaches and outlining practical planning steps (Neuman & Roskos, 1993).

Following these sessions, the teachers planned a minitopic study for their own classrooms. Assisted by one of the researchers, they worked together after school and individually over a 6-week period to prepare and implement a topic study entitled, *The Healthy Me*. This topic was chosen because it coincided with the kindergarten curriculum and schoolwide activities on health and well-being that were being undertaken at the time. The trial run provided an opportunity for the teachers to address planning issues related to integrating instruction (e.g., ensuring coverage of the prescribed curriculum), to explore key concepts related to integration, to grapple with the planning problem, and to negotiate practical concerns as they arose. The pair was then asked to plan and implement a topic study on their own, agreeing to plan together and individually as needed to accomplish the goals of an integrated instruction approach.

From mid-January through mid-March, I used several procedures to observe the teachers' planning on a topic study of winter: recorded field notes of their collaborative planning sessions, videotaped instructional episodes, audiotaped self-reflections during periodic video reviews of instruction, and conducted ethnographic-style interviews to obtain individual accounts of planning activity (Spradley, 1979). I used two data sources for analysis of the teachers' planning processes: field notes of the pair's joint planning activity and interview transcriptions of each teacher's independent planning activity. More resistant to retrieval than think-aloud data, interview data have proved useful in tracing decision-making patterns in ethnographic work (Werner & Schoepfle, 1987, pp. 159-161). Systematically shifting between self-report and clarifying conversation in the interview context, the researcher can infer action plans indicative of decision behavior.

Data Analysis

My focus of analysis was to examine novice teachers' planning decisions and problem-solving strategies in the integrated instruction planning task. The analytic goal was threefold: to examine individual interpretations of the task, that is, how each teacher made plans; to observe teachers' collaborative planning activity; and to explore variations in individual and collaborative planning processes. I carried out data analysis using content analysis techniques in several phases (Marshall & Rossman, 1989).

I organized field notes of joint planning sessions logs, indicating duration, focus of activity, and teachers' verbatim comments in each session; transcribed verbatim six individual interviews (three per teacher); and examined observations and verbatim comments for planning activity, defined as planning acts indicated by action verbs and verb phrases. For example, a teacher might say, *We brainstormed topics that might work*, indicating a planning act. I located 744 planning acts in the data sources (154 in the field notes; 590 in the interview transcripts).

I then classified each planning act as a decision type in the planning process: specifying action, observing principles, using pedagogical knowledge, allocating cognitive resources, and monitoring planning activity. I derived this typology from the Hayes-Roth cognitive planning model (Hayes-Roth & Hayes-Roth, 1979); it is used to describe planning as a creative and opportunistic process, taking into account the *interreputability* of cognitive processing. Planners, for example, can interrupt their own planning at any point to take advantage of diverse sources of information.

I next clustered decision types into those focusing on plan production and those dealing with solving the planning problem. According to the Hayes-Roth model, the first three decision categories indicate product-level processing or attending to plan specifics (plan as object), and the last two represent problem-level processing or how to go about planning the plan (planning as problem solving).

In the final phase of analysis, I examined strategic aspects of the teachers' planning. I recoded planning acts that involved allocating cognitive resources and monitoring planning efforts for level of decision, once again drawing on categories in the Hayes-Roth model. Planning activity in these areas reveals strategies for solving the planning problem (Pea & Hawkins, 1987). Interrater reliability was .93 for decision types and .91 for levels, established through independent coding of five interview excerpts by the principal researcher and a graduate assistant trained in the model.

Results

Analyses first describe each teacher's individual planning processes, followed by a description of the pair's joint planning work. Observations of process variations in the two contexts conclude the results.

Teachers' Individual Planning Processes

Sandra. Soft-spoken and deliberate, Sandra described her planning largely as determining specific planning actions, or steps to be taken, and assessing these actions against prevailing classroom conditions (see Table 1). In her words, *I look at what I want my kids to know or learn* (Mt). *I say, well, think about all the activities I can do with a topic* (Pl), *and then I write down all the activities* (Pl). She made relatively few references about using her knowledge base in building a plan (4% of total acts) or regulating the use of her cognitive resources to accomplish planning work (6% of total acts). Rather, the distribution of decisions in product- and process-level processing demonstrated little variation, suggesting a lack of flexibility in planning activity.

Sandra's strategic activity also appeared limited in scope, showing primarily evaluative strategies (see Table 1). In fact, her frequent, almost continuous reliance on evaluation (64%) seemed at times to nearly paralyze her planning effort as she searched for specific actions that might work. She said, *I constantly reevaluate, which makes it hard to stay organized* (Mt, Ev). *It seems you have to be specific and flexible at the same time* (Mt, Pr), *and I have a lot of trouble with that* (Mt, Ev).

Other self-regulatory strategies, such as prioritizing, focusing, and scheduling, were much

Table 1

Percentage of Decision Types and Levels in Individual Planning

		Sandra		Meredith	
Decision Types	**Levels**	**Percentage**	**N[a]**	**Percentage**	**N[a]**
Product-Level Processing					
Specifying action (Pl)		39	127	45	120
Observing principles (Ab)		11	35	4	11
Using pedagogical knowledge (Kn)		4	14	3	8
Problem-Level Processing					
Allocating mental resources (Ex)		6	19	3	9
	Prioritizing (Pr)	*53*	*10*	*89*	*8*
	Focusing (Fc)	*16*	*3*	*11*	*1*
	Scheduling (Sc)	*31*	*6*	*0*	*0*
Monitoring planning activity (Mt)		40	128	45	119
	Defining problem (Df)	*8*	*11*	*10*	*12*
	Solving problem (Sl)	*5*	*6*	*9*	*11*
	Observing policies (Po)	*23*	*29*	*17*	*20*
	Evaluating (Ev)	*64*	*82*	*64*	*76*

a. Number of planning acts

less evident in her reporting, accounting for only 6% of problem-level processing. In general, Sandra's planning reflected basic problem solving involving deliberate search for procedures or steps to use, selection, and evaluation against a set of established criteria such as personal taste or perceived student abilities.

Meredith. A vivacious and enthusiastic teacher, Meredith, in her account of her planning activity, identified specific actions and frequent monitoring in realizing this goal (see Table 1). She summarized, *I choose a topic* (Pl), *look through the graded course of study* (Pl), *think of possible activities* (Pl), *and, of course, consider the age of the children* (Mt, Ev) *and their experience, too* (Mt, Ev).

Like her counterpart, Meredith showed little variation in her decision making among decision types that were devoted almost exclusively to planning details and checking them against evaluative criteria she had established such as children's age. She reported little use of pedagogical knowledge in making plans (3% of total acts) or adequate management of her effort (3% of total acts). She explained, *I spend a lot of time [trying to] figure out what is most important now [immediately]* (Ex, Pr). *And trying to get all these things in* (Mt, Po) *and nothing quite coincides* (Mt, Ev); *it's very difficult* (Mt, Ev).

Meredith employed a basic problem-solving approach of select, try, evaluate: *One day things might not work well and I'll scrap the idea and try something else* (Mt, Sl) (see Table 1). With the exception of evaluating strategies (64% of monitoring decisions), she reported limited use of other cognitive and metacognitive strategies—defining the problem, generating possible solutions, or managing cognitive resources to more effectively manipulate the planning process—to tackle the planning problem.

Teachers' Collaborative Planning Processes

When planning together, the pair made decisions mostly at the problem-processing level, pertaining to executive-type decisions, such as focusing and monitoring levels of decision making (57% of planning acts) (see Table 2). This involved them in framing the problem and organizing their thinking to construct an instructional blueprint for action in their respective classrooms. For example, they allocated considerable effort to focusing on the kinds of decisions

Table 2

Percentage of Decision Types and Levels in Collaborative Planning

Decision Types	Levels	Percentage	N[a]
Product-Level Processing			
Specifying action (P1)		15	23
Observing principles (Ab)		16	25
Using pedagogical knowledge (Kn)		12	18
Problem-Level Processing			
Allocating mental resources (Ex)		26	40
	Prioritizing (Pr)	*18*	*7*
	Focusing (Fc)	*58*	*23*
	Scheduling (Sc)	*24*	*10*
Monitoring planning activity (Mt)		31	48
	Defining problem (Df)	*15*	*7*
	Solving problem (S1)	*31*	*15*
	Observing policies (Po)	*10*	*5*
	Evaluating (Ev)	*44*	*21*

a. Number of planning acts

needed as in *We need to identify the topic first* (Ex, Pr) *and then we can go from there* (Ex, Fc) to *figure out what we want the children to learn* (AEx, Fc).

They spent time defining the planning problem, as in Sandra's observation: *It's making the things you teach and what kids do in small groups and whole groups come together and really mean something—the intellectual quality of their activity* (Mt, Df). They also generated ways to develop solutions: *You have to take a look at your environment—study it, maybe even make a blueprint—and observe how your room is set up* (Mt, Sl) (see Table 2).

There was a balanced distribution across decision types in the teachers' joint work, indicating flexibility in their collaborative decision-making and use of a range of reasoning abilities in the planning process. Their product-level processing shows a cluster of decision types drawing on their knowledge bases, inferencing abilities, and organizational skills. In considering small group activities, they grappled with the issue of finding *certain tasks that would be challenging, but not too easy...age-appropriate activities that might develop critical concepts yet hold children's interest.*

Their problem-level processing consisted of attempts to orchestrate the allocation of cognitive resources (26% of decisions) with monitoring decisions (31% of decisions). Although evaluative strategies maintained a strong presence (44% of monitoring decisions), there was sufficient use of other strategies to suggest a concern for task representation. Rather than seeking an immediate solution in the form of a plan, they tried to define the planning problem and to use a means-end analysis approach for arriving at a solution. In short, their collaborative effort centered on how to do what needed to be done.

Variations in Individual and Collaborative Planning Processes

Comparison of their planning processes in the independent and collaborative planning contexts reveals interesting differences between them. Each teacher's individual planning, for example, clearly emphasized product-level processing, dominated by *what to do* and *checking* decisions, while their collaboration focused on problem-level decisions in which they sought to define the task before seeking a solution in the form of a concrete plan. Planning activity in the collaborative context seemed to more closely approximate experts' mental processing in its attention to problem formulation and regulation over problem solution (Chi, Glaser, & Farr, 1988).

The collaborative situation also indicated a more balanced distribution of decisions than independent planning work, suggesting that joint planning may have promoted greater flexibility in decision making and sparked the use of a broader range of pedagogic reasoning abilities. Seeing the task through one another's eyes may have allowed them to develop fuller representation of it. Shared thinking in relation to the task may have stimulated analytical and inferential skills that yielded new ways of seeing the problem and new possibilities for action—a phenomenon well documented in observations of productive small group work (Bos, 1937; Cohen, 1994; Miller, 1987).

Finally, evaluation strategies marked the teachers' strategic activity in individual planning whereas collaborative planning drew on executive abilities that exercised focusing and scheduling strategies as well as the metacognitive activity of monitoring progress toward goals. Thus the social context appeared to elicit greater variety in strategic activity, offering practice in a range of problem-solving strategies brought to bear on the planning task.

In general, however, these observed differences between the two planning contexts must be tempered by the likelihood that the interviews may not have retrieved the full measure of each teacher's independent thinking, because in retrospective reporting, essential steps and details are often omitted (Neisser, 1968). It is also possible that given the opportunity to plan together, they reserved more troublesome aspects of integrated instruction planning for joint work (e.g., problem definition), leaving more mundane matters for individual activity (e.g., plan specifics).

Discussion

Planning is a critical part of teachers' work. Yet its complexity as professional work and

the cognitive processing it demands are not well understood, a condition limiting efforts to fully develop teachers' planning abilities for curricular challenges. In this study, I examined two beginning teachers' planning processes in an integrated instruction planning task. My research aim was not to test their abilities with this task, but rather to observe how they interpreted it when working together and on their own. This permitted a close-up view of their planning processes and problem-solving strategies when confronted with a complex, ill-structured planning problem as well as an opportunity to explore potential influences of social factors on planning activity.

Results indicate that these beginners' independent planning decisions focused primarily on specific actions for the production of plans whereas their metacognitive activity fixed on evaluation strategies that monitored progress toward this concrete goal. Their individual planning demonstrated a lack of decision-choice flexibility and limited strategy use. Whether due to the opportunity for joint planning in this study or methodological flaws associated with self-reporting, these results nevertheless corroborate novice-expert research that notes beginners' quite literal interpretation of instructional problems with its emphasis on finding an answer, a preoccupation with details, and the use of well-practiced routines to produce a product (Swanson et al., 1990). In fact, the ill-structured nature of integrated instruction as a planning task may have heightened these tendencies, because it presented a new situation that forced skillful thought-demanding performance. Given the small sample in this study, however, further process research is clearly needed to understand beginners' handling of this particular planning task. The task's features, for example, may have demanded specific decision-making abilities and strategies not well developed in these teachers' individual problem-solving repertoires. What the task required, therefore, was unknown or unobserved, leaving them to use familiar routines that may have actually inhibited more creative approaches to the planning problem.

There were interesting variations in the teachers' independent and joint planning processes that merit further investigation. When planning together, the teachers interpreted the task differently. They viewed it as a problem to be solved more than a product to be produced. The social obligations of collaboration may have pinned their attention to understanding the problem before proceeding to solve it through a concrete plan. The presence of a partner may have forced each teacher to explain her ideas, elaborate on her thinking, or attempt to articulate misgivings, concerns, and hunches left unsaid or not pursued in solitary planning. This may account to some extent for the more balanced distribution of effort between product- and problem-level processing, greater decision-choice flexibility, and the use of a broader range of problem-solving strategies. Given the study's limitations of small sample size and methodological drawbacks, I believe additional process analysis is necessary to determine the possibilities of collaborative planning for influencing problem solving in these ways.

Yet these results offer two areas for consideration in teacher education practices. It may be that to develop beginners' planning skills, instructional support should provide more frequent and balanced practice in product-level and problem-level planning processes as applied to different instructional approaches, including integrated instruction. Beginners may need to learn how to plan both in terms of constructing a product (the plan) and representing the planning problem (the process). The study's results, for example, indicate the teachers' inflexibility in their decision choices as individual planners and their limited use of cognitive and metacognitive strategies with the integrated instruction planning task. Providing more explicit instruction in how to process planning problems through teacher modeling, structured activities, and feedback opportunities may heighten beginners' awareness of the interplay of product and process and expand their decision choices and strategies. Drawing their attention to goal-setting and problem formulation skills and strategies in particular may aid them in developing the design skills that complex instructional planning (such as integrated curriculum) demands.

It may be beneficial to provide prospective and beginning teachers with ample individual and shared planning opportunities. Working together, the teachers in this study experi-

enced other ways to interpret their instructional planning goals, ways that seemed to invoke critical examination of the planning problem and recruited the use of more sophisticated problem-solving strategies. Inserting sufficient joint and shared planning into preparatory coursework and beginning teaching may provide the additional practice and social support necessary for the advancement of individual planning abilities. Several newer approaches to instructional planning and problem solving already offer these opportunities, either directly or indirectly, and hold promise for the socialization of planning in the early years of practice, for example, case-based curriculum (Silverman, Welty, & Lyon, 1992), teaching portfolios (Desai, 1993), and teacher-team approaches (Kruse & Louis, 1995).

These are nevertheless speculative comments on an exceedingly complex area of teachers' professional work. How to plan well and together remains a knotty, albeit critical, topic for teacher education research and practice, especially in light of educational reforms that demand professionals who can provide well-planned integrative, interactive, and learner-centered instruction. Plans and the making of them involve cognitive and metacognitive processes that require careful description and study for the preparation of skillful teachers for new visions of teaching and learning.

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