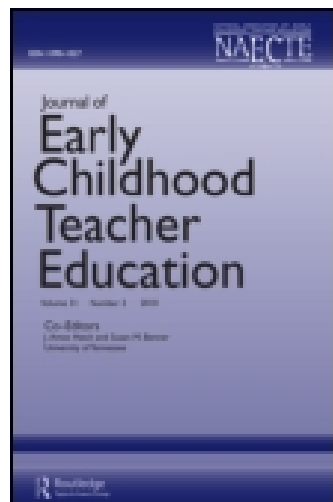


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Asiye Ivrendi^a & James E. Johnson^b

^a The Pennsylvania State University, University Park, PA, USA E-mail:

^b The Pennsylvania State University, University Park, PA, USA

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Kindergarten teachers' certification status and participation in staff development activities in relation to their knowledge and perceived use of developmentally appropriate practices (DAP)

Asiye Ivrendi*, James E. Johnson

The Pennsylvania State University, University Park, PA, USA

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Abstract

Two factors are examined that may impact public school kindergarten teachers' knowledge of DAP: certification status and participation in various staff development activities. Four research questions guide this investigation: (1) Is knowledge of DAP related to certification backgrounds? (2) Does extent of participation in different kinds of DAP-related staff development relate to certification? (3) Does extent of participation in different kinds of DAP-related staff development relate to knowledge of DAP? (4) Is there a combined effect of certification background and staff development on DAP knowledge? Knowledge of DAP was assessed with a modified form of the "Teacher Beliefs Scale (TBS)" and "Instructional Activities Scale (IAS)" (Charlesworth, Hart, Burt, & Hernandez, 1991; Charlesworth et al., 1993a). Three different certification types were compared: *Early Childhood, Elementary Education, and Other/Specialized*. Teachers were asked to report different kinds of staff development and teachers with higher levels of more varied types of staff development activities in their backgrounds were compared with those teachers with less background. Analyses revealed a significant main effect for certification but not staff development activities, the specific types of which differed by certification. Suggestions are made to improve staff development for public school kindergarten teachers in need of DAP knowledge. © 2002 Published by Elsevier Science Inc.

1. Introduction

There is concern that developmentally appropriate practices (DAPs) as defined by the National Association for the Education of Young Children (NAEYC) are not widely used in many Early Childhood classrooms (Dunn & Kontos, 1997). Accordingly, finding ways to promote DAP remains an on-going priority among Early Childhood Education (ECE) professionals. Teachers, principals, school board members, superintendents, as well as policy-makers, child advocates and parents—all need to become

more informed about DAP in ECE, and about how to implement it in the classroom (Charlesworth et al., 1991; Rusher, McGrevin, & Lambiotte, 1992). Although some research suggests that Early Childhood teachers are a major mode for informing both parents and administrators (Haupt & Ostlund, 1997; Stipek, Rosenblatt, & DiRocco 1994), it would seem that other educational leaders such as administrators also have a major role to play in removing current barriers to DAP, as well as in taking the initiative for staff development or other proactive measures needed for DAP to take firm roots in public education.

In this study, two potential factors are examined that may impact public school kindergarten teachers' knowledge of DAP: first the certification status of

* Corresponding author.

E-mail address: axb267@psu.edu (A. Ivrendi).

the teachers, and secondly, teachers' participation in various staff development activities intended to help teachers acquire more knowledge about DAP. Four research questions guide this investigation: (1) Is knowledge of DAP related to certification backgrounds? (2) Does participation in different kinds of DAP-related staff development relate to certification? (3) Does extent of participation in different kinds of DAP-related staff development relate to knowledge of DAP? (4) Is there a combined effect of certification background and staff development on DAP knowledge?

Knowledge of DAP was assessed with a modified form of the widely used questionnaires "Teacher Beliefs Scale (TBS)" and "The Instructional Activities Scales (IAS)" (Charlesworth et al., 1991, 1993a). Three different certification types which are available in the Commonwealth of Pennsylvania were compared: (1) birth through third grade (N-3); kindergarten through sixth grade (K-6); and (3) other or specialized (i.e., kindergarten through eighth grade, special education endorsement, reading specialist, and home economics). The first type included dual certification in N-3 plus K-6, and the third type included K-6 certification with some other certificate. For purposes of the present study, the first certification type is considered *Early Education*, the second certification type *Elementary Education*, and the third certification type *Other/Specialized*.

With regard to staff development, six categories were considered: (1) training, (2) individually-guided staff development, (3) observation/assessment, (4) involvement in a development/improvement process, (5) inquiry, and (6) professional development schools (PDSs). The first category "training" relates to five components or subcategories: (a) workshops, (b) on-site visits, (c) visits to DAP programs, (d) portfolio-based training, and (e) peer-coaching. In all, then, 10 specific kinds of staff development activities were assessed in this study based on teachers' self-reports. Teachers were asked to indicate the different kinds of staff development efforts they have received aimed at helping them be better teachers of young children. Those teachers with higher levels of more varied types of staff development activities in their backgrounds were compared with those teachers with less staff development background.

1.1. Developmentally appropriate practices

The largest professional organization in the ECE, the NAEYC, published its initial position statement on DAP in 1987 and a revision in 1997. The original position statement was motivated in part by a desire to counteract perceived or anticipated dangers of having younger children enrolled in public educa-

tion and being subjected to direct instruction or the teaching of isolated academic skills, readiness testing, and kindergarten retention (Bredekamp, 1987; Bredekamp & Rosegrant, 1992; Bredekamp & Copple, 1997). The revised position statement stressed that DAP is the outcome of a process of teacher decision making that draws on three critical interrelated bodies of knowledge: (1) what teachers know about how children develop and learn; (2) what teachers know about the individual children in their group; and (3) knowledge of the social and cultural context in which those children live and learn (Bredekamp & Copple, 1997, p. vii).

1.2. Research on DAP in kindergartens

In recent years a growing number of studies have pointed to the importance of having DAP kindergarten. For example, Burts et al. (1993) and Stipek, Feller, Daniels, and Milburn (1995) have shown that being in a DAP program relates to heightened academic achievement in young children. Furthermore, Burts et al. (1992) reported reduced stress as another significant correlate of being in a DAP program. Dunn and Kontos (1997) provide a review of research in this area. Also, a number of studies link having DAP programs to ECE specialization in pre-service and in-service professional training (Espinosa, 1992; Haupt, Larsen, Robinson, & Hart, 1995; Mangione & Maniates, 1993). Teacher Beliefs (or Knowledge) and Instructional Activities (Perceived Use) Scales which are employed in the present study (see below) have been used in this previous research as a measure of DAP.

1.3. Public school kindergarten

Instilling DAP in public school kindergartens has proven to be very difficult because of certain characteristics of public schools. Schultz (1992) discussed several barriers that impede the installation and use of DAP in public schools, such as the public education system's size and complexity, its policy fetish with accountability, as well as its incessant fickleness over educational reform and school improvement. Moreover, the nature of DAP guidelines in its scope and tone are often at odds with the educational philosophy of a public school. Externally imposed expectations or regulations from the government or school districts have been reported as troublesome by k-primary teachers with high DAP beliefs (McMullen, 2001). As Wortham (1995) has noted, kindergarten teachers in public schools are caught between the trends, innovations, and expectations of ECE on the one hand, and of Elementary Education on the other hand. Parents are equivocal over whether their children's education

is best served by DAP in kindergarten; many parents expect an academic curriculum and want their children to read in kindergarten. These various factors often conspire to frustrate those teachers who want to implement DAP in their kindergarten classrooms. Many kindergartens are taught by teachers who lack specialization in ECE; and this can also become an impediment to DAP curriculum, instruction, and assessment in the public schools.

1.4. Certification

In Pennsylvania teachers of young children of kindergarten age can have different certificates: N-3, K-6 (or dual certification in N-3 and K-6), as well as other types for a specialization or as carried over from another state. As reported by Silva and Johnson (1999), K-6 is by far the most commonly obtained certificate, even though according to their survey data, elementary school principals seem to increasingly favor teachers with N-3 certification over those with K-6 certification for kindergarten teaching assignments (Silva & Johnson, 1999). The data on certification types from the PA Department of Education indicate that in FY 1996–1997, 1669 ECE (N-3) certificates, and 8781 Elementary Education (K-6) certificates were issued to individuals. For FY 1999–2000, these figures were 1306 (N-3) and 7837 (K-6). An unspecified number are duals (N-3 and K-6). Far fewer specialized certificates are issued (e.g., 602 reading specialist certificates were issued in FY 1999–2000).

1.5. Staff development activities

As noted earlier, research suggests that staff development activities (or in-service training as it is sometimes called) can be effective in helping teachers improve their ECE instructional practices, their curriculum, and their assessment procedures for young children (Dunn & Kontos, 1997; Gordon & Williams-Browne, 2000; Haupt et al., 1995; Mangione & Maniates, 1993). Staff development seeks change in teacher beliefs, values, attitudes and behaviors. Hence, it can play a major role in restructuring teaching practices (Zepeda, 1999). There are a number of different kinds of staff development models as shown in Table 1.

Table 1 provides a summary of a current review of the literature on staff development models in ECE and Elementary Education. The 10 models shown represent different ways that staff development or professional development can take place (i.e., alternative methods or delivery mechanisms). Each model's emphasis is noted and an illustration is given along with the appropriate reference to the literature.

Table 1 combines work in this area coming from four citations.

According to Sparks and Loucks-Horsley (1990), there are five staff development models: (1) individually-guided staff development, (2) observation/assessment, (3) involvement in a development/improvement process, (4) training, and (5) inquiry. In addition to these models, PDS have been discussed as another type of staff development for teachers (Darling-Hammond, 1994).

The individually-guided staff development model serves teachers who are willing to determine the plan of their own learning. Feedback and some monitoring are usually available from an administrator or a more experienced teacher. In the observation/assessment staff development model, teachers receive descriptions and commentaries on their teaching actions in the classroom which can be directly beneficial in improving teaching or which can be utilized as a way of exploring different areas of teaching. The third staff development model, involvement in a development/improvement process, requires teachers to develop curriculum and design programs, or otherwise be engaged in solving actual problems of either a general or a specific nature.

The training staff development model, on the other hand, entails instruction and assistance occurring outside the usual context of working day: what teachers gain by way of knowledge or skills they are expected to apply in the classroom (Sparks & Loucks-Horsley, 1990). Five subtypes of this training are workshop, trainer visit, visit to DAP classroom, and portfolio or journal (Mangione & Maniates, 1993), as well as peer-coaching (Joyce & Showers, 1995). The inquiry model of staff development entails a process in which teachers determine a focus in their teaching and plan how to gather information relevant to the goal. The interpretation of this information leads the direction of changes in teaching (Sparks & Loucks-Horsley, 1990).

Finally, the PDS model of staff development provides a structure for pre-service teacher education occurring together with in-service professional development for beginning and veteran teachers, respectively. Professional understandings are shared among teacher educators, novices, and veteran teachers (Darling-Hammond, 1994).

1.6. Purpose and reason for present study

Our investigation was primarily directed towards examining public school kindergarten teachers' knowledge and reported use of DAP in their classrooms as a function of their certification status and their reported background staff development activities designed to improve ECE practices. We were

Table 1
Staff development models: their emphasis, illustration, and references

	Emphasis	Illustration	Reference
1. Training	Engage teachers in gaining knowledge/skills with individual/group instruction	Transmission of information via workshops, on-site visits, visit to DAP classroom, portfolio/journal, peer-coaching	Sparks and Loucks-Horsley (1990)
(a) Workshop	Presentation of content through discussions and activities...	Information on project approach	Mangione and Maniates (1993)
(b) On-site visit by teacher trainer	Observing and providing feedback	Trainer visits the classroom when the trainee applies what he/she learned	Mangione and Maniates (1993)
(c) Visit to DAP	Observing how DAP is put into practice	Observing how a project is carried out in the classroom and dialogue with that teacher	Mangione and Maniates (1993)
(d) Portfolio/journal	Demonstrating growth of the teachers about DAP. Portfolio and journals fosters reflective thinking about their practices	Reflective journals about what the teacher thought and felt when applying project approach, pictures of children in working on the project	Mangione and Maniates (1993)
(e) Peer-coaching	"Is to build communities of teachers who continuously engage in the study of their craft" (p. 83)	The teacher collaborates with another teacher to receive support and feedback	Joyce and Showers (1995)
2. Individually-guided	Teachers design their own activities to promote their learning	Teacher plans how he/she will learn about alternative assessment techniques	Sparks and Loucks-Horsley (1990)
3. Observation/assessment	Procures teachers with objective data and feedback on classroom practice	The teacher and supervisor determine an area of observation and data collection techniques. Both of them examine the collected information and the teacher takes action toward improving the area of concern	Sparks and Loucks-Horsley (1990)
4. Involvement in a development/improvement process	Involving teachers in curriculum development, programs design, group instruction	Searching current research on anti-bias curriculum and developing such a curriculum	Sparks and Loucks-Horsley (1990)
5. Inquiry	Supports teachers to identify interest, gather data, interpret, and make changes	Raising questions about how inclusive their classroom and teaching techniques are, collecting data on this area, interpreting it, and taking actions based on the interpretation	Sparks and Loucks-Horsley (1990)
6. Professional development schools	"Supports the learning of prospective and beginning teachers by creating settings in which novices enter professional practice by working with expert practitioners, enabling veteran teachers to renew their professional development" (p. 1)	Project-based teaching and alternative assessment	Darling-Hammond (1994)

also interested in comparing various kinds of staff development activities across teachers grouped by their certification backgrounds. Both certification status and staff development activities for teachers in ECE are factors that could be modified in the future should they be significantly related to knowledge and use DAP in kindergarten classrooms. Hence, the study's goal was to provide some data that could help inform ECE policy experts and public school supervisors and administrators in efforts to promote DAP in classrooms serving young children programs, including those in the public school where obstacles have often remained blocking reaching this desired goal.

2. Methods and procedures

2.1. Sample

Participants in the present study were 32 certified public school kindergarten in the Commonwealth of Pennsylvania working in 21 schools during the

2000–2001 academic year. Table 2 provides data on demographic characteristics of the sample.

As it is seen in Table 2, the teachers were well educated; 43.8% had bachelors; 50.0% had masters; and 6.3% had a masters plus credits. With respect to certification status, about 22% were considered *Early Childhood*, about 50% were considered *Elementary Education*, with the remainder *Other/Specialized*. Years of kindergarten teaching experience ranged from 1 to 26 years with well over half the teachers working in the public schools for less than 10 years. About 60% of the sample were teaching classes with 16–20 children. Less than 10% of the kindergarten teachers had class sizes less than 15 children, while slightly over a third had class sizes over 21 students. Education level, years teaching, and class size did not significantly differ across certification groups.

2.2. Procedure

Study questionnaires were mailed to a stratified random sample (based on type of region: East, West, North, or South PA) of 89 elementary schools for distribution to their kindergarten teachers around mid-December 2000. Kindergarten teachers were asked to mail their questionnaires back to the investigators. Two reminder letters, dated January 10th and February 5th, were also sent to some schools to increase the response rate. Response rate in the end remained low (14%).

2.3. Measurement instruments

The teacher questionnaire consisted of separate parts: (a) demographic information items; (b) influence information items; (c) staff development items; and two questionnaires (d) the "Teacher Knowledge Scale (TKS)"; and (e) the "IAS."

Demographic information included certification, educational background, years of experience, and teacher's class size. Influence information provided a response indication of the degree of control/influence on their classroom practices emanating from themselves, other teachers, the principal, parents, the local school system, and the state. Staff development items asked about activities and components of activities (see Table 1) provided by the school to help teachers learn how to better teach kindergarten children.

A modification of the TBS was used to assess teacher's knowledge of DAP/DIP; DIP is developmentally inappropriate practices. The IAS was employed to assess teachers' perceived use of DAP/DIP activities in their classroom. These two questionnaire instruments were developed by Charlesworth and associates—revised by Charlesworth et al. (1993a), first used by Charlesworth et al. (1991). TBS has

Table 2
Demographic characteristics of kindergarten teachers

Characteristics	No. of kindergarten teachers	Percent
Highest level of education		
BS/BA	14	43.8
Master's equivalence	3	9.4
Master's	13	40.6
Master's +	2	6.3
Certification		
N-3 Early Childhood + (e.g., both N-3 and K-6 pre-K-4 Early Childhood)	7	21.9
K-6	16	50.0
K-6 + others (e.g., K-8, special education endorsement reading specialist, home economics)	9	28.1
Years of teaching kindergarten		
0–5	12	37.5
6–10	8	25.0
11–15	7	21.9
16–20	1	3.1
21–25	3	9.4
>26	1	3.1
Number of children		
5–10	0	
11–15	3	9.4
16–20	19	59.4
21–25	10	31.3
>26	0	

36 statements about teachers' knowledge (e.g., It is... for children to work silently and alone on seatwork). Teachers rate each of the 36 items on a five-point Likert scale from not important at all to extremely important.

Two changes in the TBS were made for use in the present study as a TKS. First, the word "knowledge" is used instead of 'beliefs' as in the original questionnaire. This change was made because we felt that the term 'beliefs' is less precise than knowledge' for what we think we are learning from the individual teacher responding to this questionnaire. We are eliciting, we assume, knowledge unit of an individual relating to NAEYC's DAP guidelines for 5–8-year-old children, based on teacher lore, research and theory (Bredekamp, 1987; Bredekamp & Copple, 1997). We are not tapping convictions or beliefs. Secondly, we altered TBS item number 32 which originally read, "It is... for kindergartners to learn to read." Considering the fact that some children may show an interest in learning to read or may already know how to read, to us this question sounded less valid than the others in the questionnaire. Therefore, we took the liberty of replacing it with "It is... for children to be instructed in reciting the numbers in unison." This item is a DIP item since agreeing with it is endorsing an inappropriate practice. Other DIP items remain the same as the original instrument (Charlesworth, Hart, Burts, & DeWolf, 1993b).

IAS has 34 items that "describe an activity (e.g., participating in dramatic play). The teachers rate the frequency of availability of each activity in his/her classroom using a five-point scale from almost never (1: less than monthly) to very often (5: daily) (p. 262). Subsets of IAS items tap different areas of the kindergarten instruction: (a) curriculum goals, (b) teaching strategies, (c) guidance of socio-emotional development, (d) language development and literacy, (e) cognitive development, (f) physical development, (g) aesthetic development, (h) motivation and assessment" (Charlesworth et al., 1991, p. 261).

2.4. Analysis

Descriptive statistics (means, standard deviations, ranges) and correlations among demographic variables, response variables (knowledge/use of DAP/DIP), and staff development activity variables were computed; also, four separate two-way ANOVAs were performed with certification status group and staff development background (high level versus lesser level) as the independent variables and with scores for DAP knowledge and DAP use; and DIP knowledge and DIP use as the dependent variables.

Table 3

Mean and standard deviation scores for DAP knowledge

	Less staff development	More staff development
Early Education	4.70 (0.23)	4.56 (0.51)
Elementary Education	4.26 (0.49)	4.54 (0.42)
Other/Specialized	3.25 (1.47)	3.47 (0.41)

Note: Standard deviation scores are in parentheses.

3. Results

Results of the two by two analysis of variance demonstrated that kindergarten teachers' knowledge about DAP varied significantly in accord with their certification status ($F = 8.17$, $df = 2$, $p < .05$). The Tukey HSD *post hoc* analysis indicated that a statistically significant difference in DAP knowledge occurred comparing *Early Education* and *Elementary Education* with *Other/Specialized*. Mean and standard deviation scores are provided in Table 3.

As shown in Table 3, Early Education and Elementary Education kindergarten teachers evidently knew more about DAP than did kindergarten teachers with Other/Specialized certification. The mean difference between the former two groups of teachers (X) and the latter group (Y) of kindergarten teachers was more than one full point on the five-point Likert-type scale ($X = 4.51$ and $Y = 3.36$). In other words, Early and Elementary teachers view DAP as "very important," while the Other/Specialized teachers viewed DAP as "fairly important." Within each of the three certification groups, mean scores for DAP knowledge was not significantly different between those teachers with more versus those with less staff development.

A second ANOVA was performed to evaluate whether there is a statistically significant difference total DIP scores. The results indicated DIP scores were statistically different across certification levels ($F = 4.74$, $df = 2$, $p < .05$). The Tukey HSD *post hoc* analysis indicated that a statistically significant difference occurred comparing *Early Education* and *Elementary Education* with *Other/Specialized*.

As shown in Table 4, Early Education and Elementary Education kindergarten teachers evidently

Table 4

Mean and standard deviation scores for DIP knowledge as a function of certification and staff development

	Less staff development	More staff development
Early Education	1.89 (0.72)	2.06 (0.19)
Elementary Education	2.10 (0.60)	2.20 (0.48)
Other/Specialized	2.85 (0.93)	2.94 (0.100)

Note: Standard deviation scores are in parentheses.

Table 5

DAP perceived use/activity as a function of certification status and staff development

	Less staff development	More staff development
Early Education	3.56 (0.65)	3.64 (0.29)
Elementary Education	3.69 (0.33)	3.66 (0.27)
Other/Specialized	3.53 (0.35)	3.57 (0.49)

Note: Standard deviation scores are in parentheses.

Table 6

DIP perceived use/activity as a function of certification status and staff development

	Less staff development	More staff development
Early Education	2.30 (0.59)	2.50 (0.25)
Elementary Education	2.81 (0.96)	2.36 (0.44)
Other/Specialized	2.50 (0.74)	2.87 (0.39)

Note: Standard deviation scores are in parentheses.

recognized DIP items as less favorable practices for young children than did kindergarten teachers with Other/Specialized certification. The mean difference between the former two groups of teachers (X) and the latter group (Y) of kindergarten teachers was almost one full point on the five-point Likert-type scale ($X = 2.07$ and $Y = 2.9$). In other words, Early and Elementary teachers view DIP as "Not Very Important," while the Other/Specialized teachers viewed DIP as "Fairly Important." Within each of the three certification groups, DIP knowledge was not significantly different between those teachers with more versus less staff development.

A second and third 3×2 ANOVA were performed on DAP and DIP use scores. These analyses failed to

reach an acceptable level of statistical significance. Tables 5 and 6 provide descriptive statistics (mean and standard deviation scores) used in these analysis. Evidently, in the present sample, certification status and amount of staff development as measured in the present study, are not significantly related to the perceived use of appropriate versus inappropriate practiced with young children.

3.1. Staff development and certification

Table 7 shows the percentage of kindergarten teachers in *Early*, *Elementary*, and *Other/Specialized* who participated in each of the various kinds of staff development activities.

As can be seen in Table 7, *Early Childhood* kindergarten teachers reported that they received the least amount and least varied training and staff development in general relative to the other two groups of teachers in this study. *Early Childhood* teachers scored low on 7 of 10 categories of staff development, while only the other teachers were low on only four or five categories. Apparently, there is less need for staff development on appropriate practices for the *Early Childhood* teacher. From this table, also note that workshops and curriculum development are staff development activities widely used for all teachers, while portfolios are seldom used.

4. Discussion

Kindergarten teachers who have *Early Childhood* or *Elementary Education* certification have more knowledge of DAP than do kindergarten teachers with other kinds of certification, such as K-6 (i.e., elementary) with a reading or home economics

Table 7

Staff development activities used by teachers with different certification

Staff development activities	Early Childhood	Elementary	Other/Specialist
1. Training ^a	71	88	100
(a) Workshop	71	81	89
(b) On-site visit	14	38	44
(c) Visit to DAP classroom	14	50	67
(d) Portfolio	0	12	0
(e) Peer-coaching	43	69	67
2. Individually-guided	29	44	33
3. Observed with feedback	57	69	78
4. Curriculum development	86	81	78
5. Inquiry	43	62	44
6. Professional development school	43	25	22

Note: Scores indicate percent of teachers in each certification status group reporting that they received activity subtype.

^a Training refers to a separate questionnaire item 'provided with training'; it is not the sum or mean of components listed in (a)–(e).

specialization or a special education credential added. This was the case for when the teachers were responding to DAP items (e.g., #12, It is... for kindergartners to learn through interaction with other children) as well as to DIP items (e.g., It is... that each curriculum area be taught as a separate subjects at separate times). The result suggests that pre-service programs that prepare teachers for either ECE or elementary certification are equally effective in advancing DAP philosophy but that adding a specialized credential may lead teachers to express less DAP knowledge. Perhaps the latter teachers have been influenced towards favoring more directive and structured approaches due to more traditional educational philosophies embedded their programs of study.

Staff development was very common among the participants in this study. Training in general and the workshop training component in particular were noted as the most prevalent types, followed by curriculum development and observation/assessment (with feedback on classroom practices). All the staff development models presented in Table 3 (with data as to their use shown in Table 4), were experienced the participants of this study, although their use of varied considerably (e.g., inquiry was more common than PDS). The training subtype workshops was most common, and the training subtype use of portfolios was least common.

Although over-all staff development did not significantly relate with DAP/DIP knowledge/use, there were differences in the kinds of staff development reported by teacher groups defined by certification (see Table 4). For example, 14% of Early Childhood teachers received on-site visits or themselves visited a DAP classroom, 50% or more of the other teachers visited DAP classrooms and over a third of them received on-site visits. Peer-coaching was provided to 43% of the Early Childhood teachers but to over two-thirds of the other teachers. However, the former group of teachers reported more PDS staff development activity than did the latter groups of teachers. On the other hand, the reverse pattern was found for individually-guided staff development. In general, Early Childhood teachers reported the least amount and varied staff development compared to the Elementary Education and the Other/Specialized kindergarten teachers.

Early Childhood teachers reported least amount and least varied staff development perhaps because they do not need staff development targeted for DAP as much as the other teachers do. Teachers certified in ECE would be expected to possess DAP knowledge as a result of their pre-service training. Interestingly, as a form of staff development, they were the least likely to be observed with feedback given to them

about their classroom practices. Moreover, compared to the other teachers in this study, Early Childhood teachers most strongly voiced the view that what was most influential in implementing instruction was their own self, not other teachers, parents, the principal, state regulations, or school system policies.

The fourth research question raised in this study was whether certification status and staff development combine to affect DAP knowledge or use. The 3×2 factorial ANOVAs were done to answer this question. The results did not reveal a significant interaction between the two independent variables for either DAP or DIP knowledge/use. Accordingly, the straightforward answer to this fourth research question is negative. However, this lack of a significant interaction may be due to the way staff development was operationalized as an independent variable (more versus less amount using median split). As we have seen, examining particular kinds of staff development, clear differences among the certification groups, exist Early Childhood reported less staff development than did the other two certification groups.

Perhaps staff development received by Elementary Education teachers helped them reach parity with their Early Childhood counterparts with respect to DAP knowledge. Of course, their certification background in itself may have enabled them to respond as much in accord to DAP philosophy as did the Early Childhood teachers. Perhaps Early Childhood pre-service is not doing enough to enable their graduates to distinguish themselves in their DAP knowledge. In any event, both groups were more knowledgeable about DAP than were the Other/Specialized teachers. Future research needs to be done with more fine-grained measures of staff development, as well as with more participants and improved response rate assuming survey methods are used. In addition, observational measures of DAP/DIP use in the classroom may reveal significant effects of teacher background or staff development.

Although any generalizations are made with great caution, our results gesture to the importance of examining the interplay of certification backgrounds and staff development as factors influencing teachers' ideas and behaviors for working with young children. As long as encouraging DAP in the public schools must continue, and as long as teachers with different certifications are employed as kindergarten teachers, there will be a need to develop and implement different types of staff development activities which seek to improve teacher performance with young children.

In conclusion, two related recommendations are proffered. First, assuming that there are at times special difficulties for some teachers to acquire DAP knowledge and skills stemming from having certain

kinds of certification, we recommend staff development activities that are specifically designed to help these teachers. Perhaps especially valuable will be the use of activities for these teachers that are empowering and respectful of individual intellectual autonomy. Activities for professional development are urged that manifest the spirit of DAP and which produce in the adult authentic and meaningful learning experiences. Secondly, since staff development models do not exist in a vacuum but are implemented in real-life school contexts, defining the relationship between school administrators and teachers as equal partners seem to us to be a critical factor for enhancing the efficacy of staff development.

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