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- Does Professional Development Change Teaching Practice?

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The purpose of the Journal for Vocational Special Needs Education (JVSNE) is to advance the professional development of personnel in the field who are engaged in educating students from wide variety of special populations with an emphasis on educators, service providers, staff, and administrators who provide education or training for students preparing for the workforce and postsecondary education. Consistent with our purpose, we seek to publish articles that assist personnel who provide education or services to special population students from a diverse array of education or training settings. Articles should be centered on one of the following objectives: a) illustrate practical information; b) provide resources for the classroom or training setting; c) provide tools for the classroom or training setting; and d) report research.

JVSNE has an open submissions policy and seeks manuscripts from the field on a wide variety of practical issues confronting special needs personnel and the individuals they serve. We encourage submissions that include multiple authors representing the diversity of professional roles within the field.

We seek to publish original work that describes action research, research with an applied focus, specific instructional and management interventions. We also seek articles that help us understand underrepresented points of view, (i.e. foster care issues, Native American education issues, incarcerated youth issues) issues concerning service delivery, curriculum, and roles; strategies for fostering professional development; information pertaining to state and federal legislation that impact services from a variety of entities

servicing special populations (i.e. vocational rehabilitation legislation, the McKinney Homeless Act, Juvenile Justice Act); and issues related to the effectiveness of workforce education and training for special populations. Manuscripts on these, as well as additional topics, will be accepted at any time.

Guidelines

STYLE

Focus must be on the practical application of knowledge for special populations and those professionals who work with individuals from this category in any capacity related to workforce education and training, postsecondary education, or workforce education and training issues. We encourage authors to avoid jargon that may only be understood by one professional field working with those populations and to be mindful that the journal audience is diverse in its training and background because the personnel from the field of special populations are diverse.

We seek manuscripts that have a central message, that are pertinent to the professionals within the field, that are research based (either from hardscience research, or qualitative action research in the classroom or training setting) but that are written in a way that will allow individuals within this field, whether novice or advanced in their knowledge, to utilize the information in their professional capacity with special populations. When research from other individuals is included in the manuscript, it must be properly cited in accordance with the American Psychological Association Manual (5th edition).

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point font with one inch margins. Table and figures should be clearly labeled and, if they are from other research, should be cited appropriately.

LENGTH

Manuscripts should not exceed 50 double spaced typed pages. This includes the cover page, abstract, figures, and references.

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Manuscripts will be accepted for review when the author(s) provide: a) a cover letter indicating that the manuscript has not been published, or is not being considered for publication anywhere else, in whole or in substantial part; b) the original manuscript and three copies; c) an address, both mailing and email, where the recipient can be reached for clarification of any material submitted, for notification of acceptance of publication, or for notification of nonacceptance of publication.

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Transition Planning for Foster Youth

by Sarah J. Geenen and Laurie E. Powers, Portland State University

Abstract

The study evaluated the IEPs/Individualized Transition Plans of 45 students who were in special education and foster care, and compared them to the plans of 45 students who were in special education only. Results indicate that the transition plans of foster youth with disabilities were poor in quality, both in absolute terms and in comparison to youth who are in special education only. The review of transition plans suggests that foster youth may often go through the transition plan process with no parent advocate or educational surrogate, that professionals have limited expectations for foster youth, and that the transition plan document often does not support accountability or serve as a road map for moving into adulthood. The importance of student-directed, meaningful transition planning, services and supports for youth in foster care with disabilities is emphasized. In addition, the need for collaborative efforts between the child welfare system and special education is discussed.

This article investigates the quality of school-based transition planning for foster youth with disabilities, a group of students who face exceptional challenges as they move into adulthood and independence. Every year, approximately 20,000 youth are discharged from the foster care system when they reach the age of majority (typically age 18). For many young people, this transition into independence is sudden, and they often enter adult life with no connection to community or family, little or no financial support, and few of the skills necessary for independent living. Many of these foster youth also experience disabilities, with data indicating that 30-40% receive special education services (Advocates for Children of New York, 2000; Courtney, Piliavin, & Grogan-Kaylor, 1995; Edmund S. Muskie School of Public Service, 2000; Geenen & Powers, in press; Goerge, Voorhis, Grant, Casey, & Robinson, 1992; Sawyer & Dubowitz, 1994). Quality transition planning is important for all youth with disabilities; it is, however, especially critical for youth exiting foster care who move abruptly into adulthood and typically have minimal resources and support from others.

Transition of Youth with Disabilities in Foster Care

Very little information exists about the transition of youth who experience *both* foster care and special education, and this area continues to be neglected by researchers. Indeed, two recent large-scale studies investigating the outcomes of foster youth aging-out of care excluded youth with developmental disabilities (Courtney et al., 2005;

Pecora et al., 2005). Some of the only data stems from the National Evaluation of Title IV-E Independent Living Programs, which noted whether youth emancipated from care had an identified disability (47%), and compared the outcomes of these youth with peers in foster care who were not designated as having a disability. The evaluation found that foster youth with disabilities were less likely to (1) be employed, (2) graduate from high school, (3) have social support and (4) be self-sufficient than youth in foster care who did not have an identified disability (Westat, 1991).

Transition of Foster Care Youth

While the transition outcomes of youth with disabilities in foster care has been largely overlooked, data is readily available for foster youth in general. Studies reveal that most youth exiting foster care are underemployed; data from California, Illinois and South Carolina indicated that youth emancipated from foster care in these states had less than a 55% employment rate and typically received

Foster youth with disabilities were less likely to (1) be employed, (2) graduate from high school, (3) have social support, (4) be self-sufficient than youth in foster care who did not have an identified disability (Westat, 1991).

wages that fell well below the poverty level (Goerge, et al., 2002). Youth in foster care also are less likely to be enrolled in post-secondary education (Pecora, et al., 2003), and are under-represented in college preparatory classes compared to peers with the same skills living with their biological families

(Blome, 1997). Many youth leaving the foster care system are not able to obtain needed health care services. For example, Courtney, Piliavin, Grogan-Kaylor and Nesmith (1998) found

The National Alliance to End Homelessness found that people with a history of foster care are over-represented in the homeless population, and tend to experience homelessness at a younger age (Roman & Wolfe, 1995).

that 44% of youth discharged from care were not able to access the medical care they needed, the major reason being a lack of insurance coverage. Also discouraging, the National Alliance to End Homelessness found that people with a history of foster care are over-represented in the homeless population, and tend to experience homelessness at a younger age (Roman & Wolfe, 1995).

Transition of Youth with Disabilities

Similar to the trajectories of foster youth, almost two decades of research has documented that adolescents with disabilities experience major economic, social, community-based and educational challenges in their transition to adulthood. Consistent with the outcomes of youth in foster care, youth with disabilities who are transitioning into adulthood lag behind peers without disabilities in their rates of high school graduation, employment and postsecondary participation (Henderson, 2001; Wagner, Blackorby & Hebbeler, 1993; Wagner, Cameto, & Newman, 2003; U.S. Department of Education, 2002). Most recently, the National Organization on Disability/Harris Survey of Americans with Disabilities (2004) found that people with disabilities are more than twice as likely to be unemployed,

twice as likely to drop out of high school, and three times more likely to live in poverty, as compared to people without.

Legislation Supporting the Transition Planning of Youth with Disabilities in Foster Care

The poor adult outcomes of foster care youth and youth with disabilities have prompted the introduction of important legislation to improve transition planning. Within the area of special education, the Individuals with Disabilities Education Act (IDEA, amended in 2004) set forth specific requirements that an Individualized Education Plan (IEP) include a transition plan (including a description of needed transition services) beginning when a student turns 16 (Children's Defense Fund, 2005).

Within the area of child welfare, the Chafee Foster Care Independence Act (FCIA) was passed in 1999 to provide greater assistance to foster youth in this area. This support is typically given to youth through state independent living programs (ILPs) and assistance with housing (Massinga & Pecora, 2004). In addition, federal law (42 U.S.C. § 675) stipulates that youth in foster care, 16 years and older, have a written Independent Living (IL) plan that describes "the programs and services which will help such a child prepare for the transition from foster care to independent living" [42 U.S.C. § 675 (1) (D), cited in Pokempner & Rosado, 2003]. Parallel to the transition planning in special education, the IL plan is intended to address the skills and services a youth needs to become a successful, self-sufficient adult.

Effective Practices in Transition Planning

Multiple research studies and model demonstration efforts have evaluated approaches to transition planning, and a num-

ber of effective practices have been identified. These practices, along with accompanying research citations, are summarized in an article by Powers and colleagues (2005) and can be categorized into the following areas: (a) student involvement in transition planning; (b) instruction in skills such as self-determination, advocacy, and independent living; (c) student-centered career planning and

Studies conducted since 1993 reveal that, across school districts and disability groups, IEP transition plans were generally vague, often did not address important areas of transition, and rarely reflected effective practices.

community work experience in areas the student finds of interest; (d) assisting students to prepare for, enroll and participate in postsecondary education; (e) student participation in general education, including extracurricular activities; (f) awareness of multicultural issues in transition; (g) mentorship experiences; (h) interagency collaboration; and (i) family involvement in transition planning.

Evaluation of Transition Planning

Since legislative requirements regarding transition planning for students with disabilities have been in place, several studies have examined the extent to which plans reflect the mandates of IDEA and effective practices. While no information on the quality of transition planning exists specifically for foster youth in special education, the quality of transition planning for other populations in special education has been examined. Beginning in 1993, Lawson and Everson developed the Statement of Transition Service Review Protocol (STSRP)

to analyze the IEP transition plans of 61 students who were deaf-blind. Their evaluation found that most of the plans were nonspecific and did not contain detailed action steps for achieving goals. Over ten years later, Powers and colleagues (2005) analyzed 399 IEP transition plans using a revised version of the STSRP and similarly found that plans lacked adequate detail. Additionally, they found that transition goal areas mandated by the 1997 Individuals with Disabilities Education Act (IDEA) often were not addressed and that effective practices, such as career planning and self-determination enhancement were not incorporated within most plans. Research evaluating the quality of transition planning for students in special education is summarized in an article by Powers and colleagues (2005); generally however, studies conducted since 1993 reveal that, across school districts and disability groups, IEP transition plans were generally vague, often did not address important areas of transition, and rarely reflected effective practices.

These previous studies provide important information regarding the status of transition planning; however, they have not explored whether the quality of transition planning differs for youth in foster care. While meaningful transition planning is important for all youth in special education, it is critical for foster youth with disabilities who, when they reach the age of majority, are suddenly expected to function independently as adults with little to no family, financial, or community support. The current study examines two major research questions:

1) To what extent does transition planning for foster youth in special education (as evidenced by the transition

plans described in IEPs) incorporate the Amendments of IDEA 1997 and effective transition practices?

2) To what extent does the quality of transition planning differ for foster youth in special education as compared to youth who are in special education only?

Method

Subjects and Setting

The Oregon Division of Human Services (DHS) Child Welfare (the state foster care program) and the Oregon Youth Authority (which has a separate foster care program for youth involved in the juvenile justice system) identified all foster care youth, age 16 through 21, whose zip codes fell within a large urban

Effective practices were coded as present if there was any indication that the student had been exposed to them in the past or if they were described in the current plan.

school district in Oregon that serves approximately 57,000 students. One hundred and eighty foster youth were identified, and the names and birth date of each youth were forwarded by the agencies to the school district. Using this information, school staff attempted to match each youth with his or her school student identification number and to determine which youth received special education services. Among the 180 youth identified by DHS and OYA, the school district was able to locate identification numbers for 164 students, of which 148 were currently enrolled. Forty-five of these foster youth (30%) were enrolled in special education and comprised the Foster Care Group (Group 1) for the study. According to the school district, 23 (51.1%) of the foster

youth in our sample had a primary disability of emotional disturbance, 9 (20.0%) had a learning disability, 8 (17.8%) had a physical disability (i.e., orthopedic, hearing and/or vision, other health impaired) and 5 (11.1%) had a cognitive disability (mental retardation, autism).

A comparison group of 45 students, age 16 through 21, who were in special education only (not in foster care) was also selected, comprising the Special Education Only Group (Group 2). The goal was to have the Special Education Only Group resemble the Foster Care Group in terms of disability so that this could be ruled out as a factor if the analyses revealed any between group differences. Stratified sampling was used to select the comparison group, assuring that Groups 1 and 2 had approximately equal proportions of students with emotional, physical, learning, cognitive and communication disabilities. Thus, in the Special Education Only Group, 22 (48.9%) of the youth had a primary disability of emotional disturbance, 10 (22.2%) had a learning disability, 9 (20.0%) had a physical disability and 4 (8.9%) had a cognitive disability.

Pearson Chi-Square analyses revealed no significant differences between the two groups in terms of gender, ethnicity or grade level. Forty (44.4%) of the students were females and 50 (55.6%) were males. The racial/ethnic characteristics of the students were: 52 (57.8%) European American, 31 (34.4%) African American, 5 (5.6%) Hispanic, 1 (1.1%) Asian American, and 1 (1.1%) American Indian. With respect to grade level, 1 (1.1%) of the students was in 8th grade, 4 (4.5%) were in 9th grade, 18 (20.5%) were in 10th grade, 34 (38.6%) were in 11th grade, 28 (31.8%) were in 12th grade and 3 (3.4%)

were post-12th grade or in a transition program.

District personnel pulled and copied the student's Individualized Education Plans (IEPs), which contained their Individualized Transition Plans (ITPs). When the study was conducted, the school district included the ITP as an attachment to the IEP. Copies were provided to researchers after all identifying information (e.g., birth date, address, names) had been concealed. Among the Foster Care Group, 4 (8.9%) of the IEPs were missing transition plans (ITPs), while none of the IEPs in the Special Education Only Group were missing any ITPs.

Instrumentation

A revised version of the Statement of Transition Services Review Protocol (STSRP) [Lawson & Everson, 1993] was used to evaluate each IEP and ITP. Modifications to the STSRP made for the current study included expanding the range of ITP goals to include all transition areas identified in IDEA 1997, with additional detail gathered about sub-goal areas related to independent living (i.e., housing, transportation, health and medical, and community participation (i.e., community recreation and leisure; see Table 1). The adapted protocol also collected additional information found on the IEP, such as projected diploma type. Transition plans were evaluated using requirements outlined in IDEA 1997, as IDEA 2004 did not take effect until 2005.

Similar to the original STSRP, the quality of the transition goals was rated. In addition, two indicators, labeled "Implementation" and "Utility" were added to gather information regarding the quality of action steps. "Implementation" was used to evaluate the level of detail provided in the actions steps; it was assumed that more

specific action steps would improve program fidelity. "Utility" was used to evaluate the relevance of the action step and thereby usefulness in assisting the student in achieving the identified goal. For example, if a student's goal was to be a math major in college, an action step for that goal to perform a janitorial work experience was rated as having low utility. Both "Implementation" and "Utility" were rated on a scale that ranged from 0 to 3, where a 0 reflected the absence of any goal-related activities, and a 3 represented a strong likelihood that the action step(s) would be implemented and/or result in the desired goal.

The STSRP was also revised to collect information about effective practices such as participation in extracurricular activities or mentoring opportunities and training in person centered career planning or self-determination. Thus, transition plans were reviewed for any evidence of practices, strategies or model programs that, according to the literature reviewed earlier, promotes successful transition outcomes. Information on the student's work history (types of paid or unpaid work experience listed on the ITP) and career goals was collected in order to assess whether work experience reflected disability stereotypes and/or student interests.

Finally, the STSRP was revised to gather information on the extent to which the transition plans acknowledged issues or services specific to youth in foster care, such as connection to Independent Living Programs, specific college scholarship programs for foster youth, emancipation from child welfare, coordinated transition planning between systems, and case worker/educational surrogate/foster parent involvement in planning.

A detailed coding manual

was developed to assist the researchers in coding the IEPs and ITPs. Goals, effective practices, and other items were coded as present if there was *any* reference to it in the IEP/ITP. Effective practices were coded as present if there was any indication that the student had been exposed to them in the past or if they were described in the current plan. One-third (30) of the plans were coded by two independent raters. The average inter-rater agreement was 85.8% across all items.

Results

Targeted Goal Areas

Twelve goal areas that matched IDEA's mandates (e.g., post-secondary education, integrated employment, independent living) or representing sub goals related to these mandates (e.g., independent living related activities such as transportation, housing, and health and medical) were identified. Youth in the Foster Care Group had, on average, goals in 4.64 of the twelve transition areas. Summing across all domain areas and foster youth, a total of 209 goals were identified and coded. Table 1 presents the number and percentage of ITPs that reflected a particular goal area. The area of transportation had the most goals identified; areas of adult education and community participation had the fewest.

COMPARISON TO THE SPECIAL EDUCATION ONLY GROUP.

Significant differences were found between students in Foster Care (Group 1) and Special Education Only (Group 2) in the frequency of goals listed for the areas of post secondary education ($\chi^2 = 8.43$, $df = 3$, $p < .05$), and independent living skill development ($\chi^2 = 8.93$, $df = 3$, $p < .05$). Students in the Foster Care Group were significantly less likely than the Special Educa-

Table 1.
Number/Percent of ITPs Reflecting a Particular Goal Area

Outcome Area Reflected in ITP	Foster Care and Special Education n=45 IEPs (209 goals) No. (%)	Special Education Only n=45 IEPs (263 goals) No. (%)	Total N=90 IEPs (474 goals) No. (%)
<i>Postsecondary education</i>			
Goal included*	14 (31.1)	27 (60)	41 (45.5)
Goals detailed	1	4	
Goals adequate	10	11	
Goals minimal	3	12	
<i>Vocational training</i>			
Goal included	8 (17.8)	8 (17.8)	16 (17.8)
Goals detailed	0	0	
Goals adequate	1	2	
Goals minimal	7	6	
<i>Integrated employment</i>			
Goal included	31 (68.8)	33 (73.3)	64 (71.1)
Goals detailed	1	4	
Goals adequate	12	7	
Goals minimal	18	22	
<i>Adult education</i>			
Goal included	0 (0)	2 (4.4)	2 (2.2)
Goals detailed	0	0	
Goals adequate	0	0	
Goals minimal	0	2	
<i>Adult services</i>			
Goal included	21 (46.7)	23 (51.1)	44 (48.9)
Goals detailed	0	3	
Goals adequate	10	11	
Goals minimal	11	9	
<i>Independent living skills</i>			
Goal included*	7 (15.5)	21 (46.7)	28 (31.1)
Goals detailed	0	0	
Goals adequate	3	6	
Goals minimal	4	15	
<i>Housing</i>			
Goals included	26 (57.8)	21 (46.7)	47 (52.2)
Goals detailed	1	1	
Goals adequate	10	12	
Goals minimal	15	8	

Table 1, continued.
Number/Percent of ITPs Reflecting a Particular Goal Area

Outcome Area Reflected in ITP	Foster Care and Special Education n=45 IEPs (209 goals) No. (%)	Special Education Only n=45 IEPs (263 goals) No. (%)	Total N=90 IEPs (474 goals) No. (%)
<i>Recreation and Leisure</i>			
Goal included	26 (57.8)	35 (77.8)	61 (67.8)
Goals detailed	1	3	
Goals adequate	7	12	
Goals minimal	18	20	
<i>Community Participation</i>			
Goal included	1 (2.2)	1 (2.2)	2 (2.2)
Goals detailed	0	0	
Goals adequate	0	0	
Goals minimal	1	1	
<i>Transportation</i>			
Goal included	33 (73.3)	40 (88.9)	73 (81.1)
Goals detailed	0	7	
Goals adequate	12	16	
Goals minimal	21	17	
<i>Health and medical</i>			
Goal included	29 (64.4)	34 (75.5)	63 (70.0)
Goals detailed	2	5	
Goals adequate	11	11	
Goals minimal	16	18	
<i>Other</i>			
Goal included	13 (28.9)	18 (40)	31 (34.4)
Goals detailed	0	0	
Goals adequate	4	4	
Goals minimal	9	14	

*p<.05; **p<.01

tion Only Group to have a goal listed around post secondary education (31.1% vs. 60%) or independent living skills (15.5% vs. 46.7%). Though not all differences were statistically significant, it should be noted that in nine of the twelve transition areas, the Foster Care Group had fewer goals than the Special Education Only Group. Summing across all domain areas, youth in the Foster Care Group had fewer goals (209) than stu-

dents in the Special Education Only Group (263); the average number of goals for students across the 12 transition areas was 4.64 in the Foster Care Group and 5.84 in the Special Education Only Group. A comparison using a two-tailed t-test revealed that this difference was significant ($p<.05$). Five students in the Foster Care Group had no goals listed on their transition plan; this was the case for 1 student in the Special Educa-

tion Only Group. As previously mentioned, 4 students in the Foster Care Group had no transition plan document; thus 20% (9) of youth in this group had no transition goals.

Analysis of Transition Goals

Table 1 shows a summary of ratings of goal quality for each transition area. Only 2.9% of the goals among the foster care sample were rated as exceptionally detailed, 38.2% of the goals

were rated as adequately detailed, and 58.9% of the ITP goals in the Foster Care Group provided minimal information on what was to be achieved. Twenty-nine percent of all goals in the Foster Care Group had evidence of student desires or interests. Only one plan referenced accommodations needed by a student to achieve a goal.

When a goal was listed in the Foster Care Group, it was accompanied, on average, by

The presence of a caseworker appeared to have a positive impact on the overall quality of the transition plan.

1.28 action steps for accomplishing it. No action steps were listed for 31.6% of the ITP goals in the Foster Care Group. The health and medical area appeared to be the most problematic, with almost half (48.3%) of the goals listed in this domain having no plan for attainment. When action steps were present, they were typically rated as having low implementation feasibility and relevance: the mean implementation rating for the Foster Care Group was 1.03; the mean utility rating was 1.13, as displayed in Table 1.

School personnel were designated as responsible for an action step for 42.6% of goals in the Foster Care Group, child welfare professionals (e.g., a caseworker) were assigned an action step in 32% of goals and a family member was listed for an action step in 34.4% of goals. In forty percent of the cases in which a caseworker was designated as responsible for an action step, no child welfare professional had attended the IEP/TP meeting. Similarly, within the Foster Care Group, half the cases in which a family member was assigned an action step, there was no evidence that a family member had attended

the IEP meeting. The student was identified as responsible for carrying-out 87.1% of the action steps; over 25% of the time, the student was the *only* one designated (in other words, the student was listed as the sole person responsible for working towards a goal). Twenty percent of the goals listing the student as responsible for an action step lacked the student's signature on the IEP/TP; suggesting that the youth had not attended the meeting. Vocational rehabilitation staff were assigned an action step for only 2 of the 209 goals in the Foster Care Group. Four percent of the goals in the Foster Care Group had no one assigned to an action step. In regards to time line for completing a particular goal, only 6.8% of the goals identified a specific target date; 10.1% of the goals had no timeline for completion, 41.8% described the timeline as ongoing, and 41.3% of the goals listed the next IEP as the target date for goal achievement.

COMPARISON TO THE SPECIAL EDUCATION ONLY GROUP.

As expected, no transition plans in the Special Education Only group listed a child welfare professional (e.g. caseworker) as responsible for an action step. Otherwise, no significant differences were found.

IEP/ITP Meeting Participants

The signature line of the IEP/TP was reviewed to gather information on whether the student, an advocate (i.e., family member, foster parents, or educational surrogate), school personnel and agencies outside the school system participated in the planning process. Youth in foster care were present for their IEP/TP meeting 71% of the time. A general education teacher was involved in 46.7% of the Foster Care Group's IEP/ITPs; this figure was higher for special education teachers

(75.6%). Participation rates for school administrators, transition specialists, and school psychologists were 60%, 28.9% and 15.6% respectively. The ITPs of the Foster Care Group indicated that an advocate (i.e. family member, foster parent or educational surrogate) was present less than half the time (42.2%).

In the Foster Care Group, a child welfare caseworker was present 31% of the time. The presence of the caseworker appeared to have a positive impact on the overall quality of the transition plan. For example, over forty-two percent (42.9%) of Foster Care Group's ITPs referenced the Chaffee Independent Living when a caseworker was present for the IEP/TP meeting; this figure dropped to 16% when the caseworker was absent. Additionally, while very few transition plans addressed a foster youth's eventual emancipation from the child welfare, they were more likely to do so if the caseworker was present (3.2% vs. 6.5%). Furthermore, a foster youth's transition plan was also more likely to mention his or her employment goal(s) if a

None of the plans made reference to a student's cultural values or background, or indicated that the student would receive individualized financial or other resources.

caseworker was present for the meeting (57.1% vs. not (32.2%).

COMPARISON TO THE SPECIAL EDUCATION ONLY GROUP.

Results indicate that foster care youth are much less likely than youth in special education only to have an advocate (i.e., family member, foster parent or educational surrogate) present at the meeting ($\chi^2 = 8.43$, $df = 3$, $p < .05$). As mentioned above, an advocate was present for less than half (42.2%) of the IEP/TP

meetings with foster youth, while this figure was much higher for the Special Education Only Group (69%).

Reflections of Effective Practices

Transition plans were coded for any mention of "effective practices," strategies or model programs that, according to the literature reviewed earlier, promotes successful transition outcomes. Overall, the transition plans of youth in the Foster Care Group reflected little in the way of exposure to valued approaches: 11.1% indicated that the student was active in school-based extra-curricular activities, 4.4% suggested that the student had received or would be receiving training on self-determination, 6.7% of plans had evidence of student involvement in person centered or career planning, 2.2% documented student training around how to request services, and 4.4% of the plans specified that the student was involved in mentoring activities. None of the plans made reference to a student's cultural values or background, or indicated that the student would receive individualized financial or other resources.

Forty-two percent of the plans in the Foster Care group described a youth's work experience and 40% mention a student's employment goals. However, 64.7% of the employment experience was rated by coders as disability stereotypic, while in contrast, only 10% of the group's career goals were rated this way. When both an employment goal and work experience was specified on a transition plan (total = 12), coders rated the congruence between the two based on whether a goal and work experience fell in the same career area. Work experience was rated as consistent with a student's employ-

ment goals in only 3 cases (25%).

Diploma Type

According to the IEPs reviewed, 28.2% of the students in the Foster Care Group were expected to graduate from high school with a standard diploma, 59 % were expected to exit with a modified diploma and the projected type of graduation diploma was not indicated on 12.8% of the IEPs.

COMPARISON TO THE SPECIAL EDUCATION ONLY GROUP.

A comparison of the groups using chi square reveals that youth in the Foster Care Group are significantly more likely than the Special Education Only Group to be slotted for a modified diploma ($\chi^2 = 11.81$, $df = 3$, $p < .01$), despite the two being

The study indicates that foster youth with disabilities are designated for a modified diploma at more than twice the rate of students with disabilities not in foster care.

similar in terms of disability type. In contrast to the percentages presented above for foster youth, 63.6% of the students in the Special Education Only Group were anticipated to graduate high school with a standard diploma, 27.3% were predicted to exit with a modified diploma and the projected type of graduation diploma was not indicated on 9.1% of the IEPs.

Recognition of Foster Care Issues

Transition plans were reviewed for any acknowledgement of foster care issues, such as collaboration with child welfare around transition planning, youth accessing foster care Independent Living Programs, or recognition of a youth's likely emancipation from child welfare. Unfortunately, the coding of ITPs revealed very little awareness of

the unique experiences, opportunities and challenges foster youth may encounter. None of the ITPs made any reference to the transition planning process that occurs through child welfare. The birth dates of youth in the Foster Care Group revealed that 22 youth were turning 18 before their next scheduled IEP meeting. However, only 3 of these youth had any discussion in their transition plans about the need to prepare for the discharge from child welfare. Thus, for the 19 youth who would likely exit the foster care system before their next IEP meeting, there was no plan for how they would make this important and abrupt transition to independent adult life, or any recognition that the student would experience a change in living arrangement and possibly schools as well.

Only 11 of the 45 plans in the Foster Care Group made any reference to the Chaffee Independent Living Program. Thus, over 75% of the plans failed to mention this resource and the training around independent living skills this program could potentially offer foster youth. Based on review of the IEP/TP meeting notice, the caseworker was invited to 40% of the IEP/TP meetings (18 of the 45). The IEP/TP attendance rate of the caseworker when s/he received an invitation to the meeting was 61.1% (11 out of 18). When no invitation was sent, the caseworker attendance rate dropped to 11.1% (3 out of 27).

Discussion

Overall, the findings indicate that the transition plans of foster youth with disabilities are poor in quality, both in absolute terms and in comparison to youth who are in special education only. The review revealed that youth in the Foster Care Group had significantly fewer

goals described on their transition plans than did youth in the Special Education Only Group. In particular, youth in the Foster Care Group were significantly less likely to have goals listed around independent living skills and post secondary education; only 31% of the plans had a goal around college or trade school, and 16% contained a goal

It is concerning that only 16% of youth in the Foster Care Group had a goal listed around developing independent living skills.

around developing skills for living on one's own (e.g., meal preparation, laundry, shopping, managing a budget). Especially concerning, 20% of youth in the Foster Care Group had no goals listed at all.

An analysis of the transition goals found that youth in the Foster Care Group tended to have goals that were poorly detailed and vague, which were accompanied by an average of one action step. Additionally, almost one-third (31.6%) of these goals had no action steps listed; thus, there was often no plan for achieving a particular outcome. Goals around health and medical issues (e.g., obtaining health insurance, findings an adult health care provider) were most problematic, with almost half (48.3%) listing no plan for attainment. Only 6.8% of the goals in the Foster Care Group listed a specific target date for completion.

Approximately 29% of the time, foster youth were not present at their IEP/TP meeting. While a substantial number of youth did not participate in the meeting, they are often the one listed as responsible for working on a goal. Twenty-two percent of the time a foster youth was the *only* one designated. As concerning, an advocate (e.g., a family member, foster parent or educational surrogate) was absent for the major-

ity (57.8%) of IEP/TP meetings involving a foster youth. Advocate involvement was significantly stronger for youth in Special Education Only Group. A foster youth's caseworker was present 31% of the time; his or her attendance rate improved significantly when the school sent an invitation to the meeting. It should be noted that in 40% of the cases in which a caseworker was designated as responsible for an action step, no child welfare professional had attended the IEP/TP meeting. Similarly, in half the instances in which a family member/foster parent/educational surrogate was listed as responsible for working on a goal, there was no evidence the advocate had been present for the discussion. It is also important to emphasize that when caseworkers were present, the plans appeared more responsive to foster care issues, such as emancipation from care and connection to Independent Living Programs. None of the ITPs acknowledged the transition planning that occurs through child welfare.

The transition plans of foster youth examined in this study reflected little in the way of exposure to effective practices, ranging from a low of 2.2% for training on how to request services to 44% for identification of student employment goals. Less than 5% of IEPs/TPs referenced training around self-determination. Employment experience, when described on the plans, was typically disability stereotypic (thus, low wage jobs with little opportunity for advancement) and incongruent with a young person's career goals.

Compared to the Special Education Only Group, youth in the Foster Care Group were more than twice as likely to be slotted for a modified rather than standard diploma.

Implications for Future Research

The study indicates that foster youth with disabilities are designated for a modified diploma at more than twice the rate of students with disabilities not in foster care. Students in special education who receive a modified diploma can continue receiving school services until the age of 21. In Oregon (and many other states) youth may remain in foster care as long as they are receiving school services (even if they pass the age of 18). Thus, it is possible that youth are being directed towards a modified diploma as a means of delaying their discharge from child welfare. However, it is likely that other factors, such as lack of parental advocacy and a failure to acquire needed credits towards graduation because of frequent school changes, are contributing to this difference as well, and this area needs to be further investigated.

We were able to retrieve the transition plans that were created through child welfare for a small number of students (5) in our Foster Care Group. A comparison of the plans created through special education and child welfare revealed very little overlap, a duplication of services, and sometimes, youth having transition plans that went in different directions.

While there are new resources available to help youth in foster care attend college, we must focus on helping them get there.

Future research should investigate more extensively and systematically the congruence of transition plans created through these two separate systems, and identify opportunities for resource leveraging and greater synthesis.

This study provides an initial picture of the quality of

school-based transition planning for foster youth in special education. The sample was selected from one urban school district in Oregon, and further investigation is needed regarding the quality of transition planning for these youth in other parts of the country and in rural areas.

Limitations

Several limitations exist that should be considered when interpreting the study's results. First, our sample involved students from one urban school district, which limits the generalizability of the findings. Secondly, it is likely that what was written on the IEP/ITPs does not reflect the full range of transition supports that students were provided. It is quite possible that much of the educational and transition support provided to students is not described in IEP or ITP documents. However, while this may be the case in many instances, it is also true that the IEP and ITP documents provide the only formal, tangible and legally binding record of a student's transition activities, services and supports. Thus, these documents function in essence, as a contract, and, if required or effective transition activities are not described, they cannot be inferred to be happening. Thirdly, the use of signatures on the IEP/TP as evidence of participation also warrants qualification. While all members of the IEP/TP meeting are asked to sign the transition plan in order to document

There is a strong need for school staff to be sensitized to the unique issues, services, and supports surrounding youth in foster care.

their attendance and participation in the meeting, it is possible that some participants were present but failed to sign. However, given the importance IDEA places on inter-agency collabora-

tion and parent involvement, we believe it is unlikely that educators would fail to get the signatures of non-school participants attending the meeting.

Implications for Practice

Despite the study's limitations, there are a number of implications that can be drawn from the study to inform practice and improve transition planning for youth with disabilities in foster care.

DEVELOP TRANSITION PLANS THAT MATTER.

While the IEP transition plans of foster youth could, potentially, provide an important roadmap between school and adult life, overall the plans appeared to reflect perfunctory paperwork. The feasibility of the plans was questionable, given their lack of detail, and in general the plans did not support accountability. Adolescents in foster care face a dramatic and very real exit from child welfare and if transition planning is to have a meaningful impact, we must focus on helping students achieve success as adults, rather than on the mechanics of simply getting a plan done.

HELP FOSTER YOUTH PREPARE FOR COLLEGE.

On January 17, 2002 the "Educational and Training Vouchers for Youths Aging Out of Foster Care" (ETV) amendment was signed into law (PL 107-133). This amendment, part of the Promoting Safe and Stable Families Amendments provides direct funds to assist youth leaving care with their post-secondary education (Massinga & Pecora, 2004). However, while there are new resources available to help youth in foster care attend college, we must focus on helping them get there. Professionals need to expose foster youth with disabilities to post-secondary opportunities, and provide them with the commitment and support necessary to make these opportunities a reality.

FOCUS ON SKILLS NECESSARY FOR INDEPENDENT LIVING.

It is concerning that only 16% of youth in the Foster Care Group had a goal listed around developing independent living skills. This is an area of critical importance for youth who need to prepare for their marked emancipation from foster care. Their abrupt shift into complete independence does not support the important learning that typically happens by trial

Most ideally, the transition planning that occurs through the schools should be coordinated with the transition planning that happens in child welfare, resulting in one collaborative, student-directed plan.

and error as one transitions into adulthood over time. Furthermore, while many youth are taught important skills for adult life (e.g., shopping, laundry, cooking) by their families, many foster youth, because of their removal from their biological family and mobility within the foster care system, do not have this opportunity. Thus, it is critical that youth exiting care be exposed to these skills. Ideally, the training schools provide around independent living should be linked to the services provided through Independent Living Programs.

APPOINT AND TRAIN EDUCATIONAL SURROGATES.

The Individuals with Disabilities Education Act (IDEA) requires that parents be involved in special education planning and decision-making. IDEA further stipulates that when the biological parent is unavailable (e.g., as is the case when a child is the "ward of the state") an educational surrogate must be appointed by the school district in a timely fashion. IDEA 2004 includes language that permits schools to automatically assign

the role of educational surrogate to long-term foster parents (Children's Defense Fund, 2005). However, schools should still give thoughtful consideration to the appointment process as foster parents may not be fully aware of and prepared to meet the level of commitment and involvement required. Additionally, when a youth changes foster homes, s/he then experiences a change in educational advocate as well and lacks a caring adult who can consistently advocate for his or her educational needs over time. In some cases, a birth parent, family member, or Court Appointed Special Advocate should be considered to provide greater continuity and once designated, educational surrogates should receive training around the special education process and their rights.

Collaboration between child welfare and education.

Our sampling methodology (child welfare agencies first identifying youth in foster care and transmitting this information to the school district for determination of special education status) was used because the school district and child welfare could not identify this group from their own records. Educators need basic information about which students are in foster care and child welfare professionals need to have information about a youth's disability and involvement in special education. Legislative barriers, such as the Family Education Rights and Protection Act (FERPA), that make this exchange of information difficult, should be addressed. In addition, there is a strong need for school staff to be sensitized to the unique issues, services and supports surrounding youth in foster care. The school based transition plans evaluated in this study made little or no ref-

erence to the transition planning and services offered through the Chaffee Foster Care Independence Act.

The plans also suggested a pervasive lack of awareness regarding young people aging out of care, and the educational challenges this can create. Having case workers attend the IEP/TP meeting appears to be useful in helping educators understand and develop plans that are responsive to the experience of foster youth. While IDEA 2004 does not specify a clear role for caseworkers in the special education process (other than stipulating that the caseworker cannot serve as the educational surrogate because of potential conflict of interest), this study shows that the presence of the caseworker can result in improved school-based transition planning. Most ideally, the transition planning that occurs through the schools should be coordinated with the transition planning that happens in child welfare, resulting in one collaborative, student-directed plan. An important first step educators can take is to invite child welfare professionals to the IEP/TP meeting. As this study demonstrated, this simple step appears to encourage caseworker involvement in the special education process, but, may often be overlooked.

Approximately 40% of youth in foster care receive special education services and many others could be eligible. If we do not seriously attend to transition planning for these youth, who will be on their own after leaving school, they are at high risk to transition into homelessness, incarceration and poverty. Transition planning is an investment approach for helping all young people to move into successful adult life; for foster youth, it can be a lifeline. We must not let these youth down.

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Introduction

Excerpted From: Does Professional Development Change Teaching Practice? Results From a Three-Year Study

U.S. Department of Education, Office of the Under Secretary

What are the characteristics of professional development that improve teaching practice? This report addresses that question, using data from the National Evaluation of the Eisenhower Professional Development Program. The Eisenhower program is part of the federal government's efforts to support education reform based on high standards. The success of standards-based reforms depends on teachers' ability to foster both basic knowledge and advanced thinking and problem solving among their students (Loucks-Horsley, Hewson, Love, & Stiles, 1998; National Commission on Teaching & America's Future, 1996), and such effective practices require teachers to have a deep understanding of the content they teach (Ma, 1999). Professional development is considered an essential mechanism for deepening teachers' content knowledge and developing their teaching abilities. As a result, it is a cornerstone of systemic reform efforts designed to increase teachers' capacity to teach to high standards (Smith & O'Day, 1991).

The Eisenhower Professional Development Program, Title II of the Elementary and Secondary Education Act (ESEA), is the federal government's largest investment that is solely focused on developing the knowledge and skills of classroom teachers. The program is a primary means for helping schools and school districts across the nation meet the U.S. Department of Education's objective of ensuring that a "talented and dedicated teacher is in every classroom in America" (U.S. Department of Education,

1999c). Part B of the program, with a FY 2000 appropriation of \$335 million, provides funds through state education agencies (SEAs) to school districts and through state agencies for higher education (SAHEs) to institutions of higher education

The Eisenhower Professional Development Program is a primary means for helping schools and school districts across the nation meet the U.S. Department of Education's objective of ensuring that a "talented and dedicated teacher is in every classroom in America."

and nonprofit organizations (SAHE grantees). These funds primarily support professional development in mathematics and science, but also in other content areas. The goal of the Eisenhower Professional Development Program is to support professional development experiences for teachers that enhance classroom teaching and, ultimately, improve student learning.

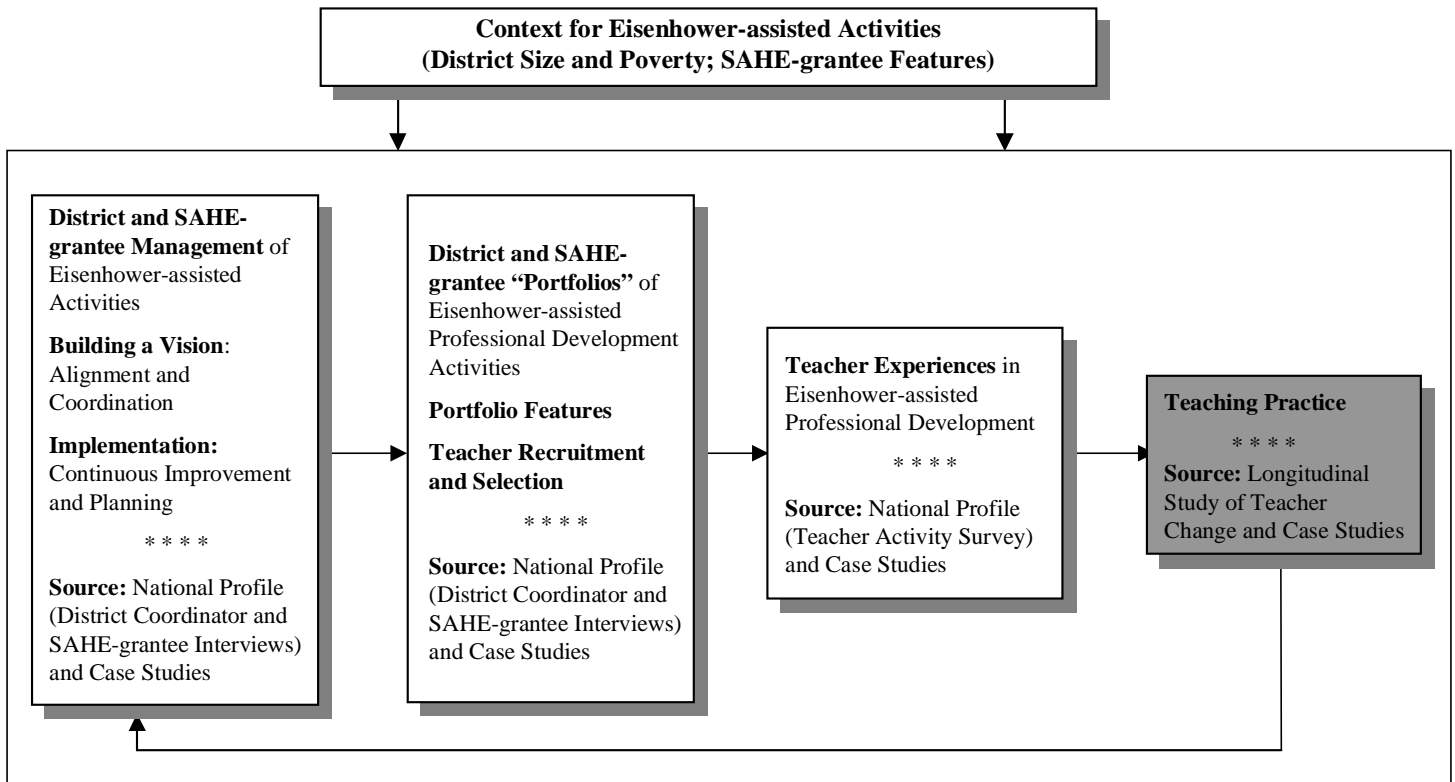
This report focuses on the effects of professional development on improving classroom teaching practice.¹ Using a purposefully selected sample of teachers in 30 schools, in 10 districts, in 5 states, we examine the quality of teachers' professional development in Eisenhower and other professional development activities and its effects on changing teaching practice in mathematics and science from 1996–1999.

This is the third in a series of reports based on a multiyear evaluation of the Eisenhower Program, conducted by the American Institutes for Re-

search (AIR) under contract with the U.S. Department of Education's Planning and Evaluation Service.² The national Evaluation of the Eisenhower Program, begun in 1996, includes three strands of data collection, each with unique strengths:

- (1)The *National Profile*, which collected data from national probability samples of district Eisenhower coordinators, SAHE-grantee project directors, and teachers who participated in Eisenhower-assisted professional development (i.e., activities sponsored in full or in part by Eisenhower funds). This component of the evaluation provided data that are generalizable to all districts receiving Eisenhower funds, all teachers who participate in Eisenhower-assisted professional development, and all SAHE-grantee projects.
- (2)The *Case Studies*, which provided detailed information about how the Eisenhower program operates in 10 schools districts—two school districts in each of five states: Kentucky, New York, Ohio, Texas, and Washington. Data from this component provided a detailed context for interpreting the quantitative findings.
- (3)The *Longitudinal Study of Teacher Change*, which surveyed all mathematics and science teachers in 30 schools—three schools (one elementary, one middle and one high school) in each of the 10 case-study districts—at three points in time.³ These data allow us to examine teachers' professional development and teaching

Exhibit 1.
Conceptual Framework for the National Evaluation of the Eisenhower Professional Development Program



practice over time. This report draws on the survey data from our Longitudinal Study of Teacher Change (LSTC) and augments the results from our earlier work based on the National Profile and Case Studies. Although the National Eisenhower Evaluation as a whole was designed to focus on several research questions addressing the type and quality of Eisenhower activities, who participates in them, how they fit into other reform efforts, and how they are managed and implemented, this report focuses on one particular research question:

Do teachers' experiences in Eisenhower-assisted profes-

sional development activities, in the context of other professional development activities, contribute to changes in teaching practice?

The LSTC was not based on a national sample; it was a purposefully selected sample of teachers in 30 schools, in 10 districts, in 5 states. The LSTC examined the quality of teachers' professional development in Eisenhower and other professional development activities and the effects of professional development on changing teaching practice in mathematics and science from 1996 to 1999.

Exhibit 1 illustrates the conceptual framework for the entire national evaluation and

highlights where the Longitudinal Study of Teacher Change fits into the overall study. Starting with the box on the far right, we show that improving teaching practice is the goal of the Eisenhower legislation. From the next box on the left, we see that teacher experiences in Eisenhower-assisted professional development activities are intended to improve teaching practice. The quality of the activities that districts and SAHE grantees make available, and the ways that districts and SAHE grantees select teachers to participate, in turn influence teacher experiences in Eisenhower-assisted professional development. We hypoth-

esized that the overall quality of Eisenhower-assisted activities is shaped by the degree of integration of the Eisenhower-assisted activities with other professional development and systemic reform efforts, as well as by how districts and SAHE grantees plan and evaluate Eisenhower-funded activities. This report describes the part of the evaluation that focuses on classroom teaching practice.

To describe the results of our Longitudinal Study of Teacher Change, we divide our analysis and reporting into five sections. First, we summarize the results from our national study and describe the design of the Longitudinal Study of Teacher Change and the way it builds on our national findings. Second, we describe the quality of professional development experienced by teachers in our longitudinal sample. Third, we explore the effects of professional development on teaching practice. Fourth, we examine trends in teaching practice and discuss how they inform our findings on the effectiveness of professional development in changing teachers' instruction. The fifth and last section of the report summarizes our results and suggests implications for the Eisenhower and other professional development programs to increase their effectiveness in fostering teacher change.

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- This introduction was excerpted from the following document: U.S. Department of Education, Office of the Under Secretary, Planning and Evaluation Service, Elementary and Secondary Education Division, *Does Professional Development Change Teaching Practice? Results from a Three-Year Study, Executive Summary*, Washington, D.C, 2002.

Endnotes

- 1 In this report, we use the terms *teaching practice*, *classroom practice*, *classroom instruction*, and *instruction interchangeably*.
- 2 The first report was based on six exploratory case studies of school districts conducted at the beginning of the evaluation, in the spring of 1997. See *The Eisenhower Professional Development Program: Emerging Themes from Six Districts*, by B. F. Birman, A. L. Reeve, and C. L. Sattler, 1998, Washington, DC: U.S. Department of Education. The purpose of that report was to obtain an initial description of the Eisenhower program and the issues that it faced in different local contexts. The second report described the status of the program on several dimensions, such as fea-
- 3 The Longitudinal Study of Teacher Change also included interviews and classroom observations of teachers in the 30 schools. Results of these data are reported in Garet et al., (1999).

tures of quality and management and implementation; the report also linked these dimensions to characteristics of the professional development and to teachers' self-reported outcomes. It was based primarily on data from three national probability samples: (1) district Eisenhower coordinators, (2) Eisenhower project directors in SAHE grantees (i.e., the institutions of higher education and nonprofit organizations supported through the SAHE component of the program), and (3) teachers participating in Eisenhower-assisted professional development (i.e., professional development that was sponsored, at least in part, by Eisenhower funds). In addition, the second report drew on data from 10 in-depth case studies in five states. See *Designing Effective Professional Development: Lessons from the Eisenhower Program*, by M. Garet, B. Birman, A. Porter, L. Desimone, and R. Herman, R. with K. Suk Yoon, 1999, Washington, DC: U.S. Department of Education.

Section I: The Study of Professional Development and Teacher Change: Building on National, Cross-Sectional Finding with Longitudinal Data

Excerpted From: Does Professional Development Change Teaching Practice? Results from a Three-Year Study.

U.S. Department of Education, Office of the Under Secretary

Over the past decade, a large body of literature has emerged on professional development, teacher learning, and teacher change.¹ The research literature contains a mix of large- and small-scale studies, including intensive case studies of classroom teaching, evaluations of programs designed to improve teaching and learning, and surveys of teachers about their preservice preparation and inservice professional development experiences.² In addition, there is a considerable amount of literature describing “best practices” in professional development, drawing on expert experiences (e.g., Loucks-Horsley et al., 1998). Despite the amount of literature, however, relatively little systematic research has been conducted on the *effects* of professional development on improving teaching or on improving student outcomes.

Although relatively little research has been conducted on the effects of alternative forms of professional development, the research that has been conducted, along with the experience of expert practitioners, provides some preliminary guidance about the characteristics of high-quality professional development. Characteristics of professional development that are identified as “high quality” or “effective” include a focus on content; in-depth, active learning opportunities; links to high standards, opportunities for teachers to engage in leadership roles; extended duration; and the collective participation of groups of teachers from the same school, grade, or depart-

ment. (See, in particular, Garet et al., 1999; Hiebert, 1999; Loucks-Horsley et al., 1998; U.S. Department of Education, 1999b.)

Although lists of characteristics such as these commonly appear in the literature on effective professional development, there is little direct evidence on the extent to which these characteristics are related to better teaching and increased student achievement.

Relatively little systemic research has been conducted on the effects of professional development on improving teaching or on improving student outcomes.

Some studies conducted over the past decade suggest that professional development experiences that share all or most of these characteristics can have a substantial, positive influence on teachers’ classroom practice and student achievement.³ Several recent studies have begun to examine the relative importance of specific dimensions or characteristics of professional development. For example, a number of recent studies suggest that the intensity and duration of professional development is related to the degree of teacher change (Shields, Marsh, & Adelman, 1998; Weiss, Montgomery, Ridgway, and Bond 1998). Furthermore, there is some indication that professional development that focuses on specific mathematics and science content and the ways students learn such content is especially helpful, particularly for instruc-

tion designed to improve students’ conceptual understanding (Cohen & Hill, 1998; Fennema et al., 1996). However, few studies have explicitly compared the effects of different forms of professional development on teaching and learning.⁴ Further, most studies of professional development have not examined its effects on a national scale.

Given the need for new, systematic research on the effectiveness of alternative strategies for professional development, we designed our evaluation of the Eisenhower Professional Development Program to enable us to examine the relationship between professional development and change in teaching practice in both a cross-sectional, national probability sample of teachers and a smaller, longitudinal sample of teachers. The Eisenhower program can then be evaluated in terms of the frequency with which program funds are used to provide professional development with features found to be effective. The results from our national sample of teachers are

We found that the six key features of high-quality professional development led to increases in teachers’ self-reported knowledge and skills and changes in teaching practice

described in detail in our second-year report, *Designing Effective Professional Development: Lessons from the Eisenhower Program* (Garet et al., 1999). Below we summarize these results and explain how they serve as

the foundation for our longitudinal study of teachers.

What We Know About Eisenhower Professional Development and Teacher Outcomes: Lessons from Our National Data

The Longitudinal Study of Teacher Change is designed to build on the national, cross-sectional data that we examined in detail in our second-year report. In Garet et al. (1999), we described results from our Teacher Activity Survey, a mail survey of a national probability sample of 1,027 teachers who participated in 657 Eisenhower-assisted activities during the 1997–98 school year.⁵ We used the survey of teachers' professional development activities to assess the effectiveness of Eisenhower-assisted activities, examine the quality of Eisenhower-assisted activities, and assess the strength of the relationships between features of the activities in which teachers participated and teachers' self-reported outcomes.

To measure the quality of Eisenhower-assisted activities, we integrated and operationalized the ideas in the literature on "best practices" in professional development. We focused on three "structural features," or characteristics of the structure of a professional development activity. These structural features include the form or organization of the activity—that is, whether the activity is organized as a **reform type**, such as a study group, teacher network, mentoring relationship, committee or task force, internship, individual research project, or teacher research center, in contrast to a traditional workshop, course, or conference; the **duration** of the

activity, including the total number of contact hours that participants are expected to spend in the activity, as well as the span of time over which the activity takes place; and the degree to which the activity emphasizes the **collective participation** of groups of teachers from the same school, department, or grade level, as opposed to the participation of individual teachers from many schools.

In addition to these structural features, we focused on three "core features" or characteristics of the substance of the professional development experience itself: the extent to which the activity offers opportunities for **active learning**—that is, opportunities for teachers to become actively engaged in the meaningful analysis of teaching and learning, for example, by reviewing student work or obtaining feedback on their teaching; the degree to which the activity promotes **coherence** in teachers' professional development, by incorporating experiences that are consistent with teachers' goals, aligned with state standards and assessments, and encourage continuing professional communication among teachers; and the degree to which the activity has a **content focus**—that is, the degree to which the activity is focused on improving and deepening teachers' content knowledge in mathematics and science.

We found that the six key features of high-quality professional development led to increases in teachers' self-reported knowledge and skills and changes in teaching practice: three structural features (characteristics of the structure of the activity)—reform type, duration, and collective participation—and three core features (characteristics of the substance of the activity)—active learning,

coherence, and content focus. Our national data allowed us to examine how these features of professional development operate to affect teacher outcomes. We used a statistical technique, ordinary least squares regression (OLS), to estimate a formal causal model, which showed that the structural features of professional development activities influenced the

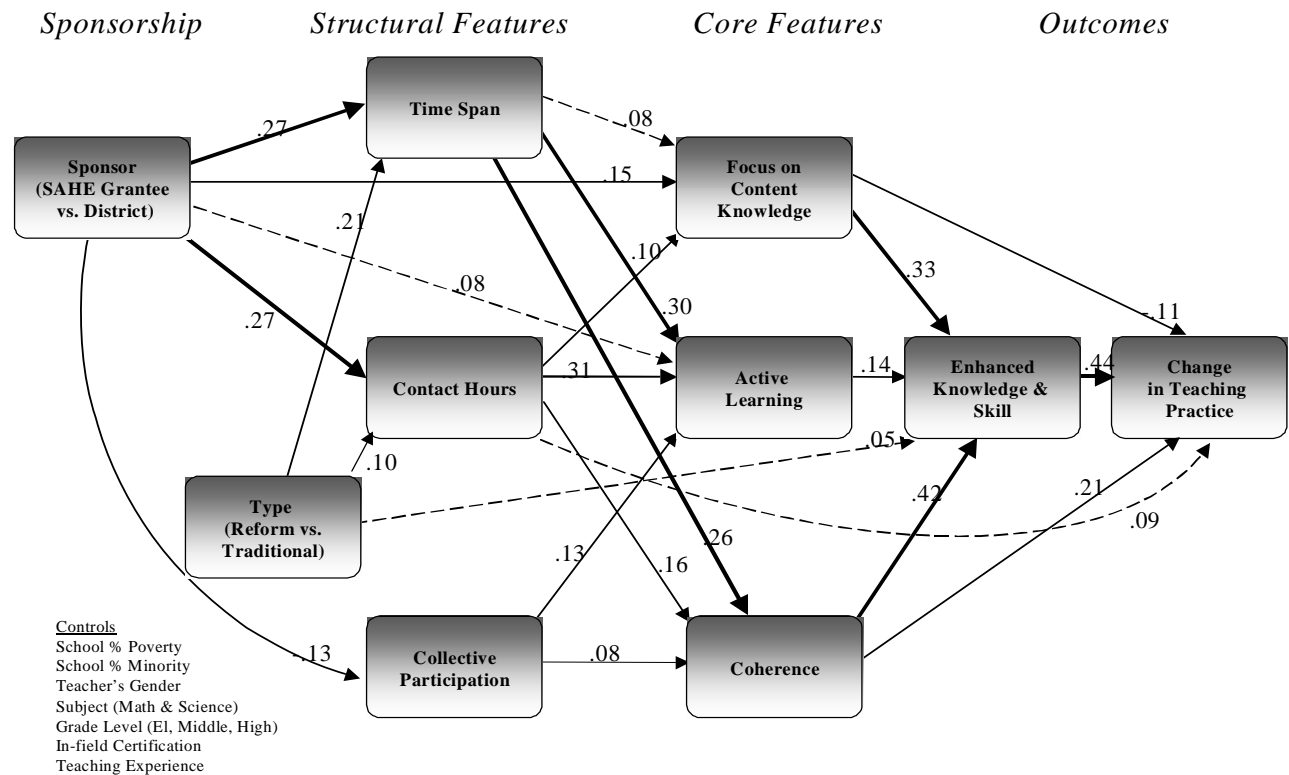
Professional development that was content-focused and coherent and had active learning was more successful in improving teacher knowledge and eliciting changes in teachers' classroom practices.

core features of the activities and that the core features, in turn, influenced how successful the experience was in increasing teacher-reported growth in knowledge and skills and changes in teaching practice. For example, as Exhibit 2 shows, activities of longer duration tended to place more emphasis on deepening teachers' content knowledge, provide more opportunities for teachers to engage in active learning experiences, and provide activities that are more coherent. Similarly, activities with greater collective participation of teachers also tended to place more emphasis on content, provide more opportunities for active learning, and offered more coherent professional development than other activities. In turn, professional development that was content-focused and coherent and had active learning was more successful in improving teacher knowledge and eliciting changes in teachers' classroom practices.

The features of high-quality professional development identified in our national data, while consistent with ideas articulated in the Eisenhower legislation, deepen and extend those

Exhibit 2.

The relationship Between Features of Professional Development and Teacher Outcomes



ideas by providing details about what makes professional development effective. For example, the Eisenhower legislation promotes professional development that is linked to other reform efforts in a coherent, systematic way. The results from our national data show the effectiveness of specific dimensions of coherence, such as discussing professional development experiences with colleagues, and participating in follow-up activities that build on previous activities.

Further, with our national data from district Eisenhower coordinators, we found significant differences between districts in the quality of professional development they provide.

We found these differences both in the features of the activities provided—such as active learning, collective participation, and the span of time over which the activities extend—and in district management strategies, including alignment with standards and assessments, frequency of co-funded projects, and a commitment to continuous improvement. Generally, we found that larger districts are more likely to provide high-quality professional development than are smaller districts. (See Garet et al., 1999, for more details on these findings.)

The Purpose and Design of the Longitudinal Study of Teacher Change

Our confidence in these results is strong, given that the data are from a national probability sample. And although the data are based on teacher self-reports, we have confidence in the validity of the data because we did not ask teachers to judge the characteristics of the activities that influenced their effectiveness; instead we asked teachers to describe the characteristics of the activities they experienced, and we asked them whether the activities had an effect on their knowledge, skills,

and classroom practice. Then, through data analysis techniques (e.g., ordinary least squares (OLS) regression), we identified characteristics that

The purpose of the Longitudinal Study of Teacher Change is to examine the effects of Eisenhower-assisted and other professional development on teaching practice in mathematics and science.

were associated with the effectiveness of the activities. Because teachers were not asked to judge the quality of the professional development in which they participated, the study minimizes self-report bias (e.g., Mullens & Gayler, 1999; Mullens, 1998). In addition, the substantial variation in the responses that teachers and district administrators provided to these behavioral items, as well as the consistency in teacher and district administrator responses, provides support for the validity of the data.

Although these data showed significant relationships between professional development and changes in teaching practice, the data are cross-sectional (i.e., they were collected at only one point in time). A stronger method of attributing changes in teaching practice to professional development experiences is to gather longitudinal data on teaching practice and experiences in professional development. The Longitudinal Study of Teacher Change was designed to build on these findings from our national, cross-sectional data. With longitudinal data, we can add to our knowledge drawn from the national data. The longitudinal data enable us to document teaching practice before and after a professional development activity and to examine the ex-

tent to which changes in teaching practice can be attributed to participation in the professional development activity.

The purpose of the Longitudinal Study of Teacher Change is to examine the effects of Eisenhower-assisted and other professional development on teaching practice in mathematics and science. We do not hypothesize, and so do not test, direct effects of professional development on student achievement; rather, we examine the direct effects of professional development on teachers' instruction. In the LSTC, we use detailed measures of teaching practice that we collected by surveying teachers at three points in time: the fall of 1997, the spring of 1998, and the spring of 1999. Although our study does not measure the effects of professional development on student achievement directly, the measures of teaching practice that we use have been associated with gains in student achievement. (We discuss the measures in more detail in Section III of this report.)

The Sample of Schools

We expected systematic differences in results by school level, so we chose one elementary school, one middle school, and one high school in each of the 10 districts we studied to allow the analysis of results by school level. Further, by design, the sample of 30 schools in the Longitudinal Study of Teacher Change is disproportionately high-poverty—17 of the sample schools, or 57 percent, are high-poverty; nationwide, 25 percent of schools are high-poverty (defined as 50 percent or more students eligible for free lunch).⁶ This feature of the sample is useful in an evaluation of the Eisenhower program because the program targets teachers in high-poverty schools.

In addition, we sought schools in which teachers were likely to participate in Eisenhower-assisted activities over the 1997–98 school year, the year in which we conducted site visits to all 30 schools.⁷ We selected states, districts, and schools in the sample that had adopted diverse approaches to professional development in addition to traditional workshops and conferences. If such professional development is more effective than traditional approaches, then the teachers' instruction in the sample schools might be better than that of the average teacher. A few of the 30 schools experienced achievement gains in 4th and 8th grade mathematics during the study period (1996–99), some experienced a decline in scores, and others remained at the same level. (See Appendix A for a list of the 4th and 8th grade achievement scores for 1996–99 for each of the 30 schools).⁸

In sum, the longitudinal sample was selected to maximize the opportunity to investigate important differences in approaches to professional development using Eisenhower funds. The sample is not nationally representative, but neither is it extremely unusual. It allows an exploratory, in-depth examination of the characteristics of professional development that foster teacher change. Our longitudinal data complement our earlier nationally representative data. The national data documented the frequency with which Eisenhower professional development has specific characteristics, and our longitudinal data allow us to look at the effectiveness of these specific characteristics over time.

The Sample of Teachers

We surveyed all the teachers who taught mathematics and

science in each of the 30 schools in the sample (i.e., all of the elementary-school teachers, and the middle and high school teachers who teach mathematics and/or science classes). We focus on mathematics and science teachers because they are the primary participants in Eisenhower-assisted activities. In elementary schools, we randomly administered mathematics surveys to half the teachers and administered science surveys to the other half. The three waves of the survey provide data pertaining to the 1996–97, 1997–98, and 1998–99 school years.

DESCRIPTION OF THE SAMPLE.

Four hundred thirty (430) teachers responded to the 1996–97 survey; 429 teachers responded to the 1997–98 survey; and 452 teachers responded to the 1998–99 survey.⁹ (See Appendix B for a complete discussion of the response rates.) Some teachers who responded did not teach mathematics or science during the 1996–97, 1997–98, or 1998–99 school year, either because they were not employed as teachers in one or more of these years or because they taught other subjects, and thus they are not included in the analyses of classroom teaching. In addition, we excluded some teachers from particular analyses because they did not complete a minimum necessary set of items on the survey. For most analyses, we rely on the sample of 287 teachers who responded to all three waves of the survey. For some analyses (those focusing only on professional development experiences), we rely on a sample of 318 teachers who responded to at least the second and third waves. And for some analyses, we restrict the dataset to teachers who taught the same course in each of the three years of the study (n=207).

The response rate for the first wave was 75 percent; for the second wave, it was 74 percent; and for the final wave in 1998, 75 percent. (See Appendix B for more details on sample sizes and response rates.)¹⁰

The sample is 74 percent female and 18 percent minority. Ninety-three percent of the sample are certified teachers. Twelve percent of mathematics teachers and 18 percent of science teachers in the sample are novice teachers, or teachers who have taught the surveyed subject for three or fewer years.¹¹ (See Appendix B for a more complete description of the sampling, response rates, design, and methodology.)

The data in this report are unique in that they provide detailed information on teaching practice and professional development over a three-year period for all teachers of mathematics and science in a school. These data enabled us to analyze relationships between teachers' professional development experiences and classroom practice, while controlling for prior differences in their classroom practice.

To set the context for examining the effects of professional development on instruction, in the next section we describe the professional development experienced by teachers in our longitudinal study.

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The previous excerpt is Section

I of the following document: U.S. Department of Education, Office of the Under Secretary, Planning and Evaluation Service, Elementary and Secondary Education Division, *Does Professional Development Change Teaching Practice? Results from a Three-Year Study, Executive Summary*, Washington, D.C., 20202.

Endnotes

- 1 See Richardson & Placier (in press) for a comprehensive review of the literature on teacher learning and professional development.
- 2 See, for example, Cohen (1990) for an intensive case study of change in mathematics teaching; Carey and Frechtling (1997) for a program evaluation of exemplary professional activities in science; and U.S. Department of Education (1999a) for a national survey of teachers focused on teacher preparation and qualifications.
- 3 See, for example, Fennema et al. (1996), an experimental study examining the effects of Cognitively Guided Instruction, an intervention in elementary school mathematics; Wilson and Ball (1991), an intensive case study of two teachers who participated in the Summer Math program; and Cohen and Hill (1998), which describes the relationship between participation in professional development, teaching practice, and student achievement, using survey data from California. See Kennedy (1998) for a review of available randomized studies examining the effects of teacher professional development on student achievement in mathematics and science. See Shields, Marsh, and Adelman (1998) for a recent examination of the effects of the National Science Foundation (NSF) Statewide Systemic Initiatives (SSIs) on classroom practice in mathematics and science; and Weiss, Montgomery, Ridgway, and Bond (1998) for an examination of the effects of the NSF Local Systemic Change (LSC) initiatives.
- 4 Kennedy (1998) and Cohen and Hill (1998) are among the few examples of studies that compare the relative effectiveness of different forms of professional development. Both studies conclude that professional development focused on the teaching and learning of specific mathematics and science content is more effective than more general professional development.
- 5 The mail survey of teachers represents a response rate of 72 percent of sampled teachers. Details regarding sampling design and methodology are provided in Garet et al., 1999.
- 6 We used poverty data from the Common Core of Data (CCD).
- 7 As part of our site visits to the 30 case study schools, we conducted one-time classroom observations of two teachers in each school—usually one mathematics teacher and one science teacher. In conjunction with the observations, we conducted a brief pre-observation interview and a somewhat longer post-observation interview with each of the 60 teachers we observed. The results of these observations are discussed in Garet et al., 1999.
- 8 The achievement data were collected from existing data at the sites. Scores were not always available for 4th and/or 8th grade for every year. Where 4th and/or 8th grade scores are not available, we provide the scores for the grades closest to 4th and 8th grade.
- 9 The response rate of high school teachers was higher than those of elementary and middle school teachers, perhaps because principals and department chairs in high school were more involved in administering the survey.
- 10 We compared responses from teachers who responded only to wave one, teachers who responded to waves two and three, and teachers who responded to all three waves and found no significant differences in gender, teaching experience, certification, poverty, and all of our measures of teaching practice. The one significant difference we found was that teachers who responded to wave one only were overrepresented in high-poverty schools, compared with those who participated in all three waves.
- 11 We asked teachers about personal background information, such as gender and years of experience, only in the baseline wave of the survey.

Section IV: Trends in Teaching Practice

Excerpted From: Does Professional Development Change Teaching Practice? Results From a Three-Year Study

U.S. Department of Education, Office of the Under Secretary

In this section, we put our results on the effects of professional development in context by examining how much average change over time there is in different dimensions of teaching practice. In particular, we use our three years of data on teaching practice to describe trends and differences across teachers and schools in the three broad aspects of teaching practice that we discussed in Section III:

- The overall alignment of teaching with national standards, using the National Assessment of Education Progress (NAEP) as the national standard
- Teachers' emphasis on the six performance goals (i.e., memorize, understand concepts, perform procedures, generate hypotheses, collect, analyze/interpret, and make connections)
- Teachers' use of the four pedagogical strategies (i.e., teacher-centered instruction, individual seatwork, active instruction, and discussion-oriented instruction)

First we report patterns in teacher change over the three-year period of our study on alignment, performance goal emphasis, and pedagogical strategies. Then we analyze differences in teaching practice between subjects and school levels, schools, and teachers and for individual teachers over time.

Do Teachers Change Their Teaching Practice?

- In our longitudinal sample, we find little change in overall teaching practice from 1996

to 1999. In particular, there was little change in teachers' average degree of alignment with the NAEP, in patterns of emphasis on performance goals, and in pedagogy.

Exhibit 18 shows the mean, or average, levels of emphasis for all 11 measures of teaching practice for each of the three years of the study. These mean levels of emphasis reflect teaching practice across all teachers

Systemic reforms foster multiple signals, and many of the signals may conflict, which could create a tension that causes teachers to be resistant to change (Cohen & Spillane, 1992).

in our longitudinal sample. (See Appendix E for mean levels of emphasis by subject and school level.) Using hierarchical linear modeling, we tested whether there were significant changes in these mean levels of emphasis, controlling for subject, school level, and the interaction of subject and school level. We found that generally, teachers' classroom practice remains stable across the three years of the study. For example, the first row in Exhibit 18 indicates that in 1996–97, on average, 21 percent of teachers' content coverage was aligned with the NAEP. (This exhibit is identical to Exhibit 7 in Section III.) Although the alignment of content coverage with the NAEP drops to 20 percent in 1997–98 and 1998–99, this difference is not statistically significant. The exhibit also shows that teachers' average emphasis on higher-order performance goals and topics and on good pedagogical strategies also do not

increase over time.^{1,2}

There may be several explanations for the lack of change in overall teaching practice. First, it is not unreasonable to think that teachers teach in ways that they believe to be effective and appropriate and do not make substantial changes in their practice from year to year, as a result of either professional development or other influences. We would not expect other professionals, in fields such as law or medicine, to make substantial changes in their behavior on the basis of one or even several professional development experiences. Second, teachers may be getting too many signals to teach in conflicting ways, and the tensions may have the effect of canceling each other out. Systemic reforms foster multiple signals, and many of the signals may conflict, which could create a tension that causes teachers to be resistant to change (Cohen & Spillane, 1992).³

It also is possible that teachers may be changing, but slowly. We measured teaching at only three points in time over three years, and thus we may not have measured teachers

These results also highlight the measurement and theoretical complexities in the study of teacher change.

long enough to capture substantial change. Further, teachers may be changing, but in ways not captured by our study. For example, teachers may be increasing their alignment with state standards, but not with the NAEP.⁴ Finally, teachers may be shifting in a particular direc-

Exhibit 18.

Average Characteristics of Teachers' Instruction for 1996-97, 1997-98, and 1998-99.

Dimension of Teaching Practice	1996-97	1997-98	1998-99
	Mean (SD)	Mean (SD)	Mean (SD)
Alignment of content Coverage with the NAEP <i>Scale: From 0 to 100% alignment with the NAEP</i>			
Alignment Index	21% (9)	20% (9)	20% (8)
Performance Goals <i>Scale: From 0 to 100% emphasis on the performance goal</i>			
Memorize	15% (7)	16% (6)	15% (6)
Understand Concepts	23 % (6)	22% (5)	22% (5)
Perform Procedures	20% (6)	20% (6)	20% (7)
Generate Hypotheses	11% (5)	12% (5)	12% (5)
Collect, Analyze, Interpret	13% (5)	13% (4)	13% (5)
Make Connections	17% (5)	17% (4)	17% (4)
Pedagogy <i>Scale: Standardized scale where mean=50 and standard deviation=10, in 1996-97</i>			
Didactic Instruction	50.1 (5.6)	50.6 (5.8)	49.9 (6.2)
Individual Seatwork	49.5 (5.4)	49.4 (5.5)	49.1 (5.6)
Active, Project-centered Instruction	49.7 (5.7)	49.5 (5.8)	49.1 (6.4)
Discussion-oriented Instruction	50.0 (10.8)	49.6 (9.3)	49.4 (8.7)

How to read this exhibit: The percent alignment of teachers' content coverage with the NAEP decreased from 21 percent in 1996-97 to 20 percent alignment in 1997-98 and 1998-99. These changes are not statistically significant. The percent emphasis that teachers give to the performance goal of memorization increased from 15 percent in 1996-97 to 16 percent in 1997-98; it decreased to 15 percent in 1998-99. These changes are not statistically significant. Teachers' use of the pedagogical strategy of didactic instruction increased from 50.1 to 50.6 in 1997-98; it decreases to 49.9 in 1998-99. These changes are not statistically significant. Pedagogy is on a standardized scale where 50 is the mean level of use of each of the four strategies; this number is not a percent, but rather a general metric designed to provide a point from which to show increases or decreases in teachers' use of a particular pedagogical strategy. The mean was standardized in 1996-97, but could vary in 1997-98 and 1998-99.

tion, but to increase emphasis on certain types of performance goals or pedagogy, teachers have to de-emphasize other strategies. This may result in the overall appearance of no change when the data are aggregated, when actually changes in one direction may offset changes in another direction.⁵

These results also highlight the measurement and theoretical complexities in the study of teacher change. There may be important differences between measures designed to capture teachers' instruction at one point in time and measures that are designed to detect teacher

growth (see Rowan, 2000). For example, as seen in Section III of this report, we were able to detect the effects of professional development on teachers' use of specific strategies intended to foster higher-order student learning, but we found relatively few effects on global measures of teaching. We do not have any working paradigms for teacher growth—either theoretical or empirical frameworks for what types of changes one would expect, their magnitude, and when these changes would occur. This is an area where more theoretical and empirical work is needed. Despite these cave-

ats, our findings provide strong evidence of the stability of teachers' classroom practice.

Variation in Teaching Practice Between Schools, Between Teachers Within Schools, and Across Time

Although we observe little change in classroom practice on average, individual teachers differ substantially in their classroom practice. We found the following:

- Despite little *average* change over time in teaching practice in our longitudinal sample, individual teachers

Exhibit 19.
Percent Variation in Teaching Practice (1996-97, 1997-98, 1998-99).

Dimensions of Teaching Practice	Percent of Variation in the Quality of Professional Development Explained by Differences Across:				Unexplained Year-to-Year Variation in Individual Teaching Practice
	Subjects and School Level	Teachers in the Same School	Schools	Years	
Alignment					
Alignment Index <i>Scale: From 0 to 100% alignment with the NAEP</i>	42.4%	27.2%	0.0%	0.0%	30.4
Performance Goals					
<i>Scale: From 0 to 100% emphasis on the performance goal</i>					
Memorization	0.0%	39.1%	2.2%	0.0%	58.7
Understanding concepts	0.0	30.0	2.5	0.0	67.5
Performing procedures	27.9	29.7	0.0	0.0	44.2
Generating hypotheses	6.7	40.0	0.0	0.0	53.3
Collecting/analyzing/interpreting data	10.3	34.5	0.0	0.0	55.2
Making connections	3.7	29.6	0.0	0.0	66.7
Pedagogy					
<i>Scale: Standardized scale where mean=50 and standard deviation=10, in 1996-97.</i>					
Traditional	25.3	40.9	6.2	0.0	27.6
Individual seatwork	10.1	40.6	9.6	0.4	39.3
Active project-centered learning	16.7	36.2	8.6	0.0	38.5
Discussion-oriented instruction	2.6	30.7	4.8	0.0	61.8

How to read this exhibit: Forty-two (42) percent of the variation in alignment is due to teachers' subject and school levels; none of the variance is due to differences between schools or average differences in teaching practice across years; 27 percent of the variation is between teachers within the same school, and 30 percent of the variation is unexplained year-to-year variation. Thus, teacher and subject/level differences account for most of the variance, and the remaining 30 percent is unexplained year-to-year variance.

in our sample do vary in their classroom practices, and moderate variation does occur in the classroom practice of individual teachers from year to year. Although there is very little change across years in average teaching practice, there still are considerable differences between teachers, as illustrated by the standard deviations reported in Exhibit 18. For example, the exhibit indicates that on average, teachers gave 15 percent of their instructional emphasis to the performance goal of

memorization in 1996-97. The standard deviation of 7 percent indicates that many teachers gave as little as 8 percent emphasis to this performance goal, whereas many others gave 22 percent emphasis to this goal. Similarly, if we look again at alignment, the exhibit shows that in 1996-97, the average alignment of teachers' content coverage with the NAEP was 21 percent. The standard deviation of 9 percent, however, indicates that for many teachers, only 12 percent of content coverage was aligned with the NAEP, whereas

for many other teachers, 30 percent of their content coverage was aligned with the NAEP. So, although we observe considerable stability in classroom practice on average, individual teachers differ substantially in their classroom practice.

Our longitudinal data enable us to answer many questions about the variation in teachers' classroom practice. For example, do teachers who teach different subjects or levels of school have different patterns of content alignment, performance goals, and pedagogy? Do

teachers in some schools differ systematically in their classroom practice from teachers in other schools? Do teachers within the same school differ from one another in their classroom practice?

Our longitudinal data also enable us to answer questions about changes in individual teachers' instruction over time. Are teacher differences consistent across years? For example, do individual teachers who emphasize active, project-centered instruction in 1997–98 also emphasize this aspect of their classroom practice in 1998–99?

Using a statistical technique called “hierarchical linear modeling” we were able to use our longitudinal data to estimate what proportion of the “variation” in teachers' classroom practice (i.e., the 11 aspects of teaching that we measure) could be attributed to (1) average differences between teachers who teach different subjects or levels of school, (2) average differences between schools, (3) average differences between teachers in the same school, and (4) average differences between one year and the next. (See Appendix E for an explanation of the analyses undertaken for this section of this report.) For each dimension of teaching practice shown in the first column of Exhibit 19, we show the percent of the variation in teachers' professional development experiences that we can attribute to each of these differences.

The last column of Exhibit 19, labeled “unexplained year-to-year variation in individual teaching practice,” shows the percent of the variation in individual teachers' practice between years that cannot be explained by any of the differences listed above. If teachers' classroom practice were totally consistent from one year to the

next, all of the variation in their instruction would result from differences between teachers' subject and school levels; differences between teachers in the same school; differences between schools; and differences in the average teaching practice between one year and the next. None of the variation would be left unexplained.

The data reported in Exhibit 19 indicate that depending on the specific dimension of teaching practice, a substantial part

Despite the consistency of teaching practice over time, we found variation between individual teachers.

of the variation in teaching practice can be explained by differences in teachers' subjects and school levels. For example, over 40 percent of the variation in alignment is due to subjects and levels. This may reflect the fact that, for example, elementary school mathematics instruction is more aligned with the NAEP than are other subjects and grades. (See Appendix E.) The exhibit also shows that almost 30 percent of the variation in emphasis on the performance goal “performing procedures” is due to subjects and levels. This supports our earlier finding from the analysis of our first year of longitudinal data, reported in *Garet et al., 1999*, that teachers of mathematics emphasize this performance goal significantly more than other teachers. Finally, about 25 percent of the variation in teachers' emphasis on traditional pedagogy is explained by teachers' subjects and school levels. This probably reflects the fact that high schools tend to have more traditional pedagogy than do middle or elementary schools. Apart from these differences between teachers' subjects and school levels, most of

the variation in teaching practices is between teachers within the same school. (See Appendix E for a discussion of these results.)

There is practically no variation across schools in alignment and performance goal emphasis, and there is a small difference across schools in pedagogy. This difference may be due to the adoption of whole-school reform designs, which often focus on pedagogical strategies (e.g., some designs hinge on project-centered learning).

Finally, Exhibit 19 indicates that there is essentially no year-to-year variation in average teaching instruction. This reflects our earlier finding of little change in average overall teaching practice over time. Although there is substantial variation across teachers in their teaching practice, this variation can be attributed to differences across individual teachers in the same school to teachers who teach mathematics instead of science, or to teachers who teach at different levels of school.

A substantial amount of year-to-year variation in the teaching practice of individual teachers remains unexplained in our analysis. This unexplained year-to-year variance is higher for the six performance goals than for alignment or for the four measures of pedagogy. The high year-to-year variation in emphasis on performance goals may indicate that teachers adjust these goals to changes in the specific student composition of their classes each year.⁶

Summary

Although teachers may be changing on dimensions or qualities of practice that we did not measure, it is evident that on many central dimensions of classroom practice, teachers in

the 30 schools we studied did not change from 1996–97 through 1998–99. However, despite the consistency of teaching practice over time, we found variation between individual teachers. We found differences in teaching practice by school level and subject, and we found that most of the variation in teaching practice is between individual teachers within the same schools, rather than between schools. Greater differences in teaching practice between schools might indicate consistent, systematic school-level instructional plans, but evidence of such planning was not found in our data.

Our findings highlight the value of conducting studies with increased power to measure change (for example, measuring teachers for more than three years). The findings also highlight the value of studies that incorporate models of teacher growth that would indicate what types of changes we would expect in teaching practice, as well as their timing and magnitude. For example, it would be helpful to have information on the type of dimensions on which we expect teachers to change and by how much we would expect them to change during a one-year period versus a two-year period.

Lastly, although teachers do not report changing their teaching practice in ways we might consider desirable, the fact that they are consistent over a three-year period in reporting their instructional practices lends strong support to our survey instrument as a reliable measure of teachers' instruction.

In the final section of this report, we summarize and synthesize our findings on teachers' professional development experiences and the effects of professional development on instruction and trends in teach-

ing practice, and we suggest implications for designing and supporting professional development through the Eisenhower and other programs.

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The previous excerpt is Section IV of the following document: U.S. Department of Education, Office of the Under Secretary, Planning and Evaluation Service, Elementary and Secondary Education Division, *Does Professional Development Change Teaching Practice? Results from a Three-Year Study, Executive Summary*, Washington, D.C, 20202.

Endnotes

- 1 At the outset of the study we targeted several topics to monitor over time. These were subjects, such as probability, statistics, measurement, and geometry, that have been identified as special weaknesses for students in the United States (Beaton et al., 1996). We conducted analyses of these and an exhaustive list of topics by subject and school level, and the only topic for which there was even a marginally significant increase was advanced alge-

bra in high school ($p < .07$, $n = 28$). These analyses were done separately by school level and subject and had sample sizes of approximately 30 teachers, which limits the power to detect effects.

- 2 The only significant change over time effect is an interaction between year and subject for teachers' emphasis on memorizing and understanding concepts. See Appendix E for the results of these analyses.
- 3 We observed during our site visits in 1996–97 that many of the schools were engaged in multiple reform efforts.
- 4 AIR is currently conducting a study, *Moving Standards to the Classroom*, sponsored by the Planning and Evaluation Service, which is focused on examining the extent to which teachers' instruction in mathematics is aligned with state standards; in addition, the Wisconsin Center for Education Research, in collaboration with the Council of Chief State School Offices (CCSSO), has conducted a study of the alignment of teaching with state assessments and is planning a study of the alignment of teaching with state standards.
- 5 This also might help explain the random variation in individual teachers' trajectories that we found.
- 6 The fact that only 30 percent of the variation in alignment is due to unexplained year-to-year variation indicates that the "test-retest" reliability of our measure of content coverage is relatively high. If all the year-to-year variation were due to measurement error, the implied reliability would be .70.

Section V: Summary and Implications

Excerpted From: Does Professional Development Change Teaching Practice? Results from a Three- Year Study

U.S. Department of Education, Office of the Under Secretary

The Eisenhower Professional Development Program's primary goal is to support professional development for teachers that will improve classroom practice and, ultimately, student achievement. AIR's multiyear evaluation of the Eisenhower Program sought to provide information to help the Eisenhower Program, and other professional development efforts, achieve this important goal. Our evaluation was intended to help policymakers and program managers by (1) describing professional development activities supported by the Eisenhower program and the way they are managed and implemented and (2) evaluating the effects of the professional development activities on teaching practice.

To describe Eisenhower-funded activities and the effects of professional development on teaching practice, the national evaluation included both a nationally representative cross-sectional component and a more focused longitudinal component. Our analyses based on national samples of district Eisenhower coordinators, state agency for higher education (SAHE)-grantee project directors, and teachers, were reported in Garet et al., 1999. They describe the type and quality of Eisenhower activities, who participates in them, how they fit into other reform efforts, and how they are managed and implemented by districts and SAHEs. The Longitudinal Study of Teacher Change, described in this report, examines the effects of Eisenhower-assisted and other professional development

on teachers in 30 schools. We analyzed the effects of professional development on broad and specific measures of teaching practice: the alignment of content coverage with national standards; an emphasis on performance goals for students; pedagogical strategies; and higher-order use of technology, instructional methods, and student assessments.

The findings and implications that we draw from both the national and longitudinal data, and summarize in the following section, extend beyond the Eisenhower Program. Although our national data on professional development focused only on Eisenhower-assisted activities, the longitudinal teacher survey included professional development funded by Eisenhower and other sources as well. This occurred because we asked teachers to describe

The results from our national data show the effectiveness of specific dimensions of coherence, such as discussing professional development experiences with colleagues and participating in follow-up activities that build on previous activities.

the most helpful activity they participated in during the school year, and some of the activities that teachers chose were not funded by Eisenhower. Nevertheless, because our focus in all aspects of our study was on relationships between features of professional development and teaching practice, our findings apply to teachers' professional development in mathematics and science in general,

whatever the funding source.

The Effects of Professional Development on Teaching Practice

On the basis of our national data, we concluded that six key features of professional development are effective in improving teaching practice: three structural features (characteristics of the structure of the activity)—reform type, duration, and collective participation—and three core features (characteristics of the substance of the activity)—active learning, coherence, and content focus (see Garet et al., 1999). These findings from our national data support other recent studies that highlight the importance of content focus in professional development (e.g., Cohen & Hill, 1998; Kennedy, 1998). The features of high-quality professional development identified in our national data also are consistent with ideas articulated in the Eisenhower legislation. Further, they deepen and extend the ideas in the Eisenhower legislation by providing details about what makes professional development effective. For example, the Eisenhower legislation promotes professional development that is linked to other reform efforts in a coherent, systematic way. The results from our national data show the effectiveness of specific dimensions of coherence, such as discussing professional development experiences with colleagues and participating in follow-up activities that build on previous activities.

The findings from our longitudinal data reinforce the im-

portance of the six features of professional development identified in the national study. In addition, results from our longitudinal study extend our national findings by providing evidence of the link between focusing on specific teaching strategies in professional development and having teachers use those specific strategies in the classroom. Specifically, in our longitudinal study, we found the following:

- Professional development focused on specific, higher-order teaching strategies increases teachers' use of those strategies in the classroom. This effect is even stronger when the professional development activity has features of high quality (e.g., reform type, active learning, coherence, and collective participation).

These findings are especially strong because they are based on only one professional development experience per teacher per year. Teachers may experience many professional development activities in one year, so it is especially noteworthy

Our results suggest that change in teaching would occur if teachers experienced consistent, high-quality professional development.

that we found effects on teaching practice of the one experience that teachers chose to describe on our survey.

Our longitudinal data also indicate that professional development is more effective in changing teachers' classroom practice when it has specific features of high quality, such as the collective participation of teachers from the same school, department, or grade; active learning opportunities, such as reviewing student work or obtaining feedback on teaching;

and coherence, for example, linking to other activities or building on teachers' previous knowledge. These findings are based on longitudinal data collected at three points in time. They validate the results from our national probability sample of teachers in Eisenhower-assisted activities, which indicated that features of quality were significantly related to teachers' self-reported outcomes (Garet et al., 1999).

Participation in Professional Development

Our findings on the effects of professional development should be considered in the context of the nature and quality of teachers' experiences in professional development. Our results suggest that change in teaching would occur if teachers experienced consistent, high-quality professional development. But we find that most teachers do not experience such activities. On average, the activities experienced by teachers in our Longitudinal Study of Teacher Change are about the same quality as those experienced by our national sample of teachers in Eisenhower-assisted activities. Our national data indicated the following about district-supported Eisenhower activities: an average of only 23 percent of teachers participating in Eisenhower-assisted professional development were in reform types of professional development; the average time span of a professional development activity was less than a week; the average number of contact hours was 25 and the median was 15 hours; most activities did not have collective participation or a major emphasis on content; and most activities had limited coherence and a small number of active learning opportunities (see Garet et al., 1999 for more

details). In short, nationwide, the typical professional development experience was not high-quality. Nevertheless, our national data also documented great variation in the quality of teachers' professional development experiences, which indicates that at least some teachers participate in high-quality activities, at least some of the time.

Our longitudinal data indicates that the quality of professional development experiences varies considerably not only across teachers at a single point in time but also over time for the same teachers:

- Teachers experience professional development that varies in quality from one year to the next. Further, teachers in the same school tend to have quite different professional development experiences.

We find a substantial amount of year-to-year variation in the

Both our national and our longitudinal data indicate that professional development is more effective when teachers participate with others from their school, grade, or department.

quality of the professional development of individual teachers. For example, 79 percent of the variation in the span and 62 percent of the variation in the content focus of a teacher's professional development experience are due to year-to-year variation. This finding indicates that the average teacher's professional development experiences do not add up to a long-term, coherent, high-quality program—the type of program that has the most potential for fostering significant and lasting teacher change.

We find some variation in participation in professional development between schools (e.g., 14 percent of the variation in collective participation and 7

percent of the variation in active learning is due to between-school variation), but most of the variation in the quality of the professional development in which teachers participate lies *within*, not *between*, schools. This finding supports the idea that professional development continues to be an individual teacher experience. Both our national and our longitudinal data indicate that professional development is more effective when teachers participate with others from their school, grade, or department. Thus, the variation in teachers' professional development experiences within the same school helps explain why professional development is not as effective as it could be.

Trends in Teaching Practice

Perhaps partly as a result of the uneven quality of professional development, we find the following:

- In our longitudinal sample, we find little change in overall teaching practice from 1996 to 1999.

Beyond the specific and targeted instructional practices, where we do observe change as a result of professional development, more generally we see little overall change in self-reported teaching practice. Given the usual low quality and inconsistent nature of professional development in which teachers participated, it is perhaps not surprising that we find little change in overall teaching practice over the period of the study. Our data show that teachers' alignment of content with national standards, the goals that teachers have for their students, and their basic pedagogical strategies appear to remain highly stable over time. It may be true that teachers changed on dimensions that we did not measure or that they changed the way they *implemented* cer-

tain practices instead of changing their relative emphasis on

Our data show that teachers' alignment of content with national standards, the goals that teachers have for their students, and their basic pedagogical strategies appear to remain highly stable over time.

these practices. However, given the multiple and high-profile efforts of standards-based and school-based reforms to provide professional development to change teachers' practice in desirable ways, we are surprised that teachers, as a group, did not move in the directions in which reforms intend to push them.

This lack of results may be a function of weak and fragmented professional development. We find professional development with desirable features in short supply, and where it does occur, it does not occur systematically over time for particular teachers. Few teachers experience the kind of consistent, high-quality professional development that we have found changes teachers' instruction in desirable ways.

Measuring instruction at multiple points over a more extended period of time might increase our ability to capture change in average teaching practice. However, we are confident in our results that at least for the three years of our study, teachers changed little in terms of the content they teach, the pedagogy they use to teach it, and their emphasis on performance goals for students.

- Despite little *average* change over time in teaching practice in our longitudinal sample, individual teachers in our sample do vary in their classroom practices, and moderate variation does occur in the classroom practice of individual teachers from

year to year.

Although in our longitudinal sample, teachers' practice did not change on average, individual teachers did make moderate changes in their teaching practice from one year to the next. For example, 30 percent of the variation in alignment and 28 percent of the variation in the use of traditional pedagogy is due to year-to-year variation. This year-to-year variation might be due to teachers' adapting to the ability levels of their students or to other influences related to their students or school.

Further, we find a great deal of variation across teachers in their classroom teaching practice. Most of this variation is between teachers in the same school, not between schools. For example, 40 percent of the variation in teachers' use of generating hypotheses and 31 percent of the variation in teachers' use of discussion-oriented instruction are due to variation between teachers in the same school. A substantial amount of variation between schools might suggest a coherent, organized school-fostered system of instruction. Instead, we find that individual teachers in the same school have very different teaching practices. This finding only adds support to the concept that both teaching and professional development are typically individual experiences.

Implications for Policy and Practice

In sum, we find that high-quality professional development that focuses on specific teaching strategies does affect teaching practice and that this effect is stronger if the professional development has the six dimensions of quality identified in the analysis of our national sample of teachers—the professional development is a reform rather than traditional type, is sus-

tained over time, involves groups of teachers from the same school, provides opportunities for active learning, is coherent with other reforms and teachers' activities, and is focused on specific content and teaching strategies. However, teachers generally do not experience consistent, high-quality professional development. Professional development remains an experience that varies substantially from one teacher to the next, and even from one year to the next for a given teacher. Districts and schools face several challenges in providing high-quality professional development to all their teachers.

First, districts and schools often must choose between serving larger numbers of teachers with less focused and sustained professional development or providing higher-quality activities for fewer teachers. As we noted in *Garet et al. (1999)*, good professional development requires substantial resources. Re-allocating resources and combining funding sources can be effective in increasing funds for professional development. However, in the absence of increased resources, the federal government, states, districts, and schools still have to make difficult choices whether to sponsor shorter, less in-depth professional development that serves a large number of teachers or to support more effective, focused, and sustained professional development for a smaller number of teachers. The Eisenhower legislation encourages the idea of sustained, intensive professional development, and the results of this study support the idea that districts and schools might have to focus professional development on fewer teachers in order to provide the type of high-quality activities that are effective in changing teaching practice.

Second, many districts and schools have limited capacity to translate into practice the knowledge about effective professional development. This evaluation has shown that professional development is most effective when it has the six features of quality that we identified earlier—reform type, duration, collective participation, active learning, coherence, and content focus (also *Cohen and Hill, 1998*; and *Kennedy, 1998*). As we stated in our last report, more information is needed on the characteristics and conditions that give some districts the capacity to provide this type of high-quality professional development. States and districts could benefit from more detailed information and guidance from the federal government about how to use the Eisenhower program to design and provide professional development that has the specific high-quality features that make it effective for teachers.

Third, districts and schools often do not have the infrastructure to be able to manage and implement effective professional development. Improving

Our longitudinal study indicates that much of the variation in professional development and teaching practice is between individual teachers within schools, rather than between schools.

the quality of professional development is an ambitious undertaking. The analysis of data from our national probability sample of district Eisenhower coordinators showed that planning that includes system alignment (e.g., the alignment of professional development with standards and assessments), funding coordination, and continuous improvement efforts significantly improves the quality of professional development

activities that districts provide (*Garet et al., 1999*). Case data from our 10 districts and data from both our national and our longitudinal studies indicate that some of this planning exists but that it is not systematic or widespread. Our longitudinal study indicates that much of the variation in professional development and teaching practice is between individual teachers within schools, rather than between schools. This finding provides evidence that schools generally do not have a coherent, coordinated approach to professional development and instruction, at least not an approach that is effective in building consistency among their teachers. Participation in professional development is largely an individual teacher's decision; teachers often select the professional development in which they will participate from a number of options available from a highly disparate set of providers. An increased emphasis by the Eisenhower program on the importance of strategic, systematic planning for professional development may encourage both districts and schools to improve their efforts in this area.

In sum, our findings show that the most effective professional development is focused on specific higher-order teaching strategies and has features of high quality. Our national data, however, showed that on average, teachers do not experience high-quality professional development. Having a coherent, long-term plan would enable districts and schools to provide both the depth of professional development experiences needed for them to be effective and the breadth of coverage of specific content and teaching strategies that teachers should learn over time. The provision of high-quality programs of professional development by

schools and districts may not completely solve the problem of the variation in the quality of professional development, since participation in professional development remains primarily the decision of individual teachers. Nevertheless, districts and schools could go a long way in developing high-quality professional development activities. To develop meaningful professional development plans, districts and schools would have to overcome challenges to focusing on and setting priorities for professional development activities over time, given limited resources; acquiring knowledge about the features of effective professional development; and building the infrastructure to

design and implement the types of activities that teachers need to improve student learning. The Eisenhower Professional Development program and other sources of funding could continue to play an important role in helping districts and schools overcome these challenges and develop high-quality professional development experiences that will lead to better teaching and better learning.

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