Access to Early Words: Community-Wide Child Care Literacy Training Makes a Difference

Final Report

Submitted by

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Executive Summary

Evaluation Description

Early Words is a training and mentoring initiative designed to improve children's early language development and literacy skills by enhancing the quality of services offered by child care providers in Multnomah County. Research has clearly shown that children who are placed in higher-quality child care settings, and in particular, in environments in which early literacy and language development are emphasized, have more positive developmental outcomes. This report describes the final results from the evaluation of the 2000 training and mentoring provided by the Oregon Center for Career Development in Childhood Care and Education and Multnomah County Library with support from Mt. Hood Community College and the Oregon Child Development Coalition.

Evaluation Methods

Data were collected in the following ways[1]:

1. Interviews with 8 trainers and 6 mentors who delivered the program 1–3 months after training was completed. The interview tool was specifically designed for the purpose.

2. Mail surveys of 137 child care providers participating in the training 1–3 months after training was completed. The survey tool was specifically designed for the purpose.

3. Observations of 40 trained child care providers with an observation scale created to reflect the training modules 4–6 months after training was completed. The observation tool was specifically designed for the purpose.

4. Observations of 39 child care providers who had signed up, but had not yet attended training. They were observed with the same scale used with the trained providers.

5. Direct assessments of 52 children (ages 3–5) who were in the care of the trained providers for at least 4 months. Three measures were used to assess literacy skills thought to be related to school readiness: alphabet knowledge, concepts about print, and emerging writing. The child assessments took place 9–12 months after the training.

6. Demographic information for 51 families was collected as part of the child assessment process (one set of twins).

Key Findings

What Were Providers' Beliefs and Attitudes About Literacy and Language Practices After Early Words?

One of the first steps towards changing provider practices is to change their beliefs and attitudes about the importance of early language development and what it takes to create an environment that supports language and literacy. The evaluation found that after participating in Early Words

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[1] It should be noted that because of the timing of the training and evaluation, the provider data include two different comparison groups rather than one group with a pre-post measure. The child assessment data are also on comparison groups rather than a pre-post test. Although adequate, this design in not ideal.

more than 75 percent of participating providers agreed that the following literacy-enhancing activities were "very important:"

- reading to children every day,

- modeling reading and writing,

- helping children learn alphabet letters,

- allowing children daily free access to books and writing materials,

- having diverse cultures represented in books and writing materials,

- talking to children about daily routines,

- asking children about stories while reading, and

- sounding out words for children.

What Was the Quality of the Literacy and Language Environment Among Providers?

Another goal of Early Words was to help providers to learn about concrete changes they could make to their child care physical settings to best support children's early language and literacy development. After the training, providers self-reported making concrete changes to their environments, specifically:

- 86% of providers reported creating or expanding a book nook,

- 67% of providers reported creating or expanding a children's listening center,

- 55% allowed children to have more daily access to writing/marking materials, and

- 53% allowed children to have more free access to books and materials.

Observers found statistically significant differences, or levels approaching statistically significance, with the trained providers having higher scores in the following literacy environment areas:

- The quality of the books available to children,

- Literacy displays, in particular, the introduction of the alphabet, and

- Cultural diversity (including multicultural books), inclusion of more one than one language when multiple languages are spoken by the children in care, and visual displays showing ethnic and racial diversity.

What Kinds of Literacy and Language Enhancing Behaviors Were Providers Using?

Early Words also provided training to help providers learn about positive ways that they could interact with children to support language and literacy. The trained observers found statistically significant differences, or levels approaching statistically significance, with the trained providers having higher scores in the following areas:

- Using songs and chants with children,

- Making children more aware of the alphabet in the context of activities—in particular, use of phonemes such the sounds in children's names or words in books, and

- Using storybook routines.

Providers themselves reported making changes in their behavior, specifically:

- Between 55% – 65% reported that they had better "reading out loud" skills such as pointing out features of print (55%), more regular reading (55%), or asking questions about stories (65%);

- 34% of providers reported engaging in "a lot more" modeling of writing, labeling of objects;

- 31% of providers reported engaging in "a lot more" language-supportive activities; and

- 31% reported working "a lot more" with children on alphabet letters.

Were There Patterns in Quality Findings Related to Care Settings or Training?

There were three patterns in the findings about quality:

- The observations showed bigger variations in the higher-quality providers compared with lower-quality providers. The scores for a few of the quality items showed a great deal of variation in the post-training condition. Why this finding occurred is unclear; however, providers who were already thinking about, discussing with colleagues, or using the skills already may have benefited the most from the training. In other words, if they already were trying or thinking about the skill, the training helped them get better at it. This does not mean providers new to the idea did not implement the skill, but tended to not do it as well as providers with a head start.

- Providers operating in center-based child care settings tended to have higher-quality environments compared to family day care providers. Although both groups had a range of higher- and lower-quality care settings, centers tended to have higher scores overall. However, neither group had large numbers of providers with exceptionally high scores. The average quality score was 1.13 on a scale of 0–3, with a range of 0–3, with 3 being high quality. This suggests that most providers had room to improve.

- Trained provider global literacy ratings were statistically significantly higher than untrained providers. An interesting side effect of the literacy training is that it also appeared to positively impact general global quality ratings as well, although not to quite the same degree. This suggests that literacy may be a non-threatening way to entice providers to training and boost their overall quality, as well as making it easier for them to consider training in less exciting, but equally important areas like health and safety.

Were There Outcomes Differences For Children In Higher- and Lower-Quality Settings?

Children in both groups were tested using measures of alphabet knowledge, concepts about print, and emerging writing skills. A statistically significant difference, or levels approaching statistical significance, favored the children in the higher-quality environments on the following skills:

- Letter name knowledge;

- Beginning sounds of words such as "Z" is for zebra, "A" is for apple; and

- Emerging writing including approximations of print as well as letters and words.

There were no differences on the concept about print measures, suggesting that although providers are reading more to children, it is not yet sufficient to show statistically significant gains.

Did the training reach the desired lower-income providers and children?

During the 2000 training project, 376 providers were trained in 104 sessions in four languages (English, Spanish, Russian, and Vietnamese). In addition to training, 197 of these providers were mentored. While the majority of the providers were white/Caucasian, a significant number of minority providers were also represented (about 35% Hispanic, African American, Asian, and bi/Multiracial). Slightly more than one-third of the providers served children speaking English as a second language. About 60 percent of the providers also served low-income children. There was a mix of center-based (59%) and family child providers (40%). A smattering of other roles in the early care and education community also attended. Providers cared for the full age range of infants through kindergarten-aged children. One of the goals of Early Words was to engage providers serving low-income and minority children, and it appears that good progress was made in reaching this goal. A closer look at family data points out why the goal is worth pursuing even more strongly.

Families were asked to fill out a short demographic questionnaire when they signed permission slips for child testing. One striking difference between the families in the higher- and lower-quality groupings of the trained providers is that single parents appear to have their children in lower-quality care and more family child care settings. This is an incidental finding and not related to Early Words, but is likely to be an important finding for larger community issues.

The analysis that looked at the interface of quality, child outcomes, and family income showed trends suggesting that lower-income children are the mostly likely to benefit from higher-quality programs. And, they also show the lowest child outcomes scores in low-quality care. Because the number of children in this condition was small, further study is needed to conclude this with authority.

What appears to encourage providers to continue to come to training?

Three different groups were queried about incentives and barriers. Each had a slightly different perception of what keeps providers returning, but it is clear that some combination of concrete incentives and the professional climate encouraged attendance.

Summary and Discussion of What Have We Learned So Far

The "bottom-line" questions of the evaluation are: 1) Does the training appear to make a difference in the quality of care, and 2) Does that quality make a difference in child outcomes? Given that pre-post measures on the same group of providers and children were not possible and that the sample sizes are small, conclusions about these questions must be made with caution. However, the data suggest that:

- Providers operating in center-based child care settings tended to have higher-quality environments, compared to family day care providers.

- Trained providers had higher overall global quality of their literacy environment as well as their general global quality, compared to untrained providers.

- Compared to untrained providers, the trained providers appear to have higher-quality practices in several important ways. In particular, the following practices in trained providers were noteworthy:
    - having better-quality books available for children,
    - using multiple strategies to promote awareness of cultural diversity in children,
    - using more alphabet image and alphabetic awareness activities, and
    - using songs and chants.
- Children in higher-quality care environments were more likely to have stronger alphabet knowledge and emerging writing skills.
- Although not an outcome of Early Words, an important incidental finding is that single parents tended to have their children in lower-quality care environments.

These findings suggest that while the training appears to have a positive influence in a number of key areas. However, given the relatively low average quality scores, there is still room for improvement in the quality of the language and literacy environments among providers, even those who participated in Early Words. Yet, the positive attitudinal changes about the importance of early language and literacy development were self-reported by providers, suggesting providers are open to continuing change.

Comprehensive community initiatives can improve the quality of child care and child outcomes, if significant funds and activities are focused on the issue. But in particular, less well trained family child care providers can make considerable changes in quality if they are supported.

Recommendations

Even though many findings suggest the Early Words is working, refinements, at least for some providers, is likely to increase the quality of child care in the county. It is suggested that Early Words consider:

- Including additional focused mentoring as part of the training to help providers identify specific ways to improve the quality of their language and literacy environments.
- Offering additional training to those already trained to further reinforce basic concepts, to offer child care providers additional ideas, information, and to share resources promoting language and literacy development.
- Building in more problem solving strategies for managing materials and creating time to implement information during the training and mentoring.
- Increasing the time spent on the importance of frequent and regular reading with children that uses storybook reading routines.

Over and above these specific recommendations for program improvements, the Commission should take every opportunity to examine and promote strategies to improve the quality of child care programs used by single-parent, low-income families. Doing so may offer their children more equal access to quality early care and education.

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A. Context

Displaying emerging reading and writing skills such as knowing print carries the message in a picture book, how to write your name, and recognizing a few letters in the alphabet prepares children well for kindergarten. The majority of Early Childhood professionals recognize the most effective way for children younger than 5 to develop these literacy skills is to be exposed to consistently high-quality literacy- and language-rich environments where they are read to, talked with, and offered opportunities to practice skills in focused, but playful activities (Snow, C.E., Burns, S.E., & Griffin, P., 1998; and Neuman, S.B., Copple, C., & Bredekamp, S., 1999).

In Multnomah County, the state of Oregon, and the nation, there is growing concern that children are entering kindergarten with lower readiness skills than desirable. Low skill levels in more children than is thought to be normal have been documented in a series of statewide benchmark studies in Oregon (Oregon Department of Education, 1997, 1999). Using Multnomah County's section of the statewide readiness database, a county benchmark audit found approximately 40 percent of the county's 5-year-olds are entering school not yet reaching developmental milestones of well-developed children (Nichols, 1998). Although the statewide data collection tool has only just added literacy skill development to their 2001 study, neighboring Washington County looked at literacy in a 1998 benchmark study. They found that 49 percent of entering 5-year-olds were below normative levels on basic literacy skills (Severeide, 1998).

Given the state and local concerns about school readiness—and literacy in particular—staff and citizen committees of the Multnomah County Commission of Children, Families, and Community designed Early Words, an initiative to promote emerging literacy in young children. As part of the initiative, the Commission funded the development and delivery of a curriculum targeting child care providers. This report details an evaluation of that training project.

Project Description

Early Words is a training and mentoring initiative designed to improve children's early language development and literacy skills by enhancing the quality of services offered by child care providers in Multnomah County. Four agencies participated in the development and delivery of the training project: Oregon Center of Career Development in Childhood Care and Education at Portland State University, the Multnomah County Library, Mt. Hood Community College, and the Oregon Child Development Coalition. The Portland State office served as the lead agency and developed the curriculum.

Six modules training were developed to use in six separate, 2-hour sessions. The modules also contained companion support materials for providers to use on their own. The topics of the sessions were:

- Leap Into Language and Literacy

- The Magic of Children's Literature

- Rainbow of Words

- Hey Baby! Can We Talk?

- Again! Again! 18–30 Months
- ABC's and Beyond: 30 Months – 5 Years

The partner agencies reached out into the larger early childhood community to recruit child care providers. Professional groups, early care and education programs, resource and referral groups, and networking agencies assisted in recruiting participants and hosting training sessions.

A variety of incentives were used to encourage participation. They included substitute and transportation vouchers, evening and weekend training sessions, food at the meetings, mentoring from the Library's early childhood literacy mentoring teams, and resource grants up to $500 for purchasing books materials.

The time frame for the development and training was from January 2000 through June 30—3 months for the development and the next 3 months for training. It was a Herculean effort to develop materials, recruit, register, train the trainers, conduct training sessions, offer mentoring, and manage the resource grants. It is a testament to the organization and hard work of the development team that 376 providers were trained and resource materials were selected and distributed in four languages.

The Evaluation Charge

Shortly after the project development started, the Commission funded an evaluation of the training initiative. NPC Research, in conjunction with Early Childhood Strategies, was contracted to study provider and child outcomes and to describe aspects of the process. A series of study questions was designed to guide the evaluation.

Outcome Questions for Providers and Children

1. What were providers' beliefs and attitudes about literacy and language practices after Early Words?
2. What was the quality of the literacy and language environments among providers?
3. What kinds of literacy and language enhancing behaviors were providers using?
4. Were there patterns in quality findings related to care settings or training?
5. Were there outcomes differences for children in higher- and lower-quality settings?

Process Questions

1. Did the training reach providers serving lower-income children?
2. What appears to encourage providers to continue to come to training?
3. What can we learn about the implementation that can be useful in refining and improving the project?

B. Evaluation Methods

Evolution of the Evaluation

The study questions guided the evaluation. However, as with any evaluation, the data collection and analysis plans were modified to meet changing conditions. Originally, the study plan called for comparing practice between providers who attended one or two training sessions (light intervention) and providers who attended five or six (full intervention). Using this plan proved to be impractical because so many providers went to the bulk of the training sessions. After discussions with Commission representatives and a community advisory committee, a revised plan evolved.

A random, stratified sample of providers who attended the trainings was selected to serve as the main study group. They were surveyed about their own perceptions of the changes they made in beliefs and practices. A smaller group of these providers was then observed to record its actual practices. Since a pretest was not possible, a second comparison sample of providers was drawn from the registration records of the 2001 Early Words series. The comparison group was observed with the same instrument used with the trained providers. Using the scores from the actual observations, the study group providers and the comparison group providers were placed into higher- and lower-quality subgroups for analysis purposes.

Changes in Grouping the Children for Analysis

The change in the way the providers were grouped for analysis required a change in the way children were selected and grouped to study training effects. Originally, the low-high training attendance rate was also planned for selecting children. Instead, the children were selected so that approximately an equal number were in the care of providers offering higher- and lower-quality care. The final study design as it evolved in represented in Figure 1.

Figure 1. Early Words Study Design

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                    │ Training Registration Files│
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                       ↙                    ↘
        ┌──────────────────┐        ┌──────────────────┐
        │ Untrained Providers│        │ Trainied Providers│
        └──────────────────┘        └──────────────────┘
                 │                            │
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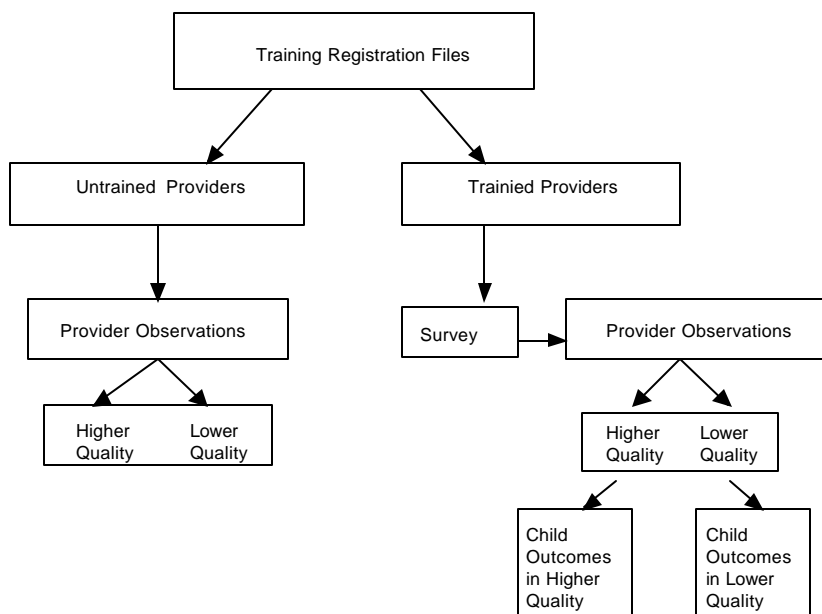
A pre-post test plan with the same group would be more definitive, but was not possible with the timeline. So, although not ideal, the sampling plan was adequate to learn many valuable lessons.

The Study Population

Providers in Study Group

A random sample of 237 providers reflecting the full range of participants was sent a mail survey in July 2000. The return rate was 56 percent with 133 providers returning the survey. A smaller sample of 40 responding providers was observed in September and early October 2000. Approximately half of the originally drawn sample was replaced to reach the 40 providers for the observation sample. Replacements were due to a variety of reasons including no longer being in business, no children currently enrolled, or discomfort with being observed.

Providers in Comparison Group

The 39 providers used for comparison came from the 2001 Early Words class registration lists. They had registered, but had not yet attained training. Approximately half were replaced before a full comparison group was located that had not yet been trained and who were willing to be observed. There were no statistically significant differences between the study and comparison groups on variables such as experience, prior training levels, or whom they served.

Children in Study Group

The goal was to assess 60 children, ages 3 through 5, who had been with the same trained provider for at least 4 months. After locating trained providers who were part of the original 40 observed providers with appropriate children, parental permission was sought. Fifty-two children

from 51 families were available to be tested in February 2001. Table 1 details the child and family demographic characteristics.

Table 1. Child and Family Demographic Characteristics

Characteristic	Number	Percent
Age of child		
• 3 years	15	28.8 %
• 4 years	30	57.7%
• 5 years	7	13.5%
Length of Time in Care With Provider		
• 4–6 months	7	13.5%
• 7–12 months	5	9.6%
• more than 12 months	40	76.9%
Family Configuration		
• Parents who are Married or with Partner	34	65.4%
• Single Parent	18	34.6%
Lower-Income Indicators		
• TANF	6	11.5%
• Publicly Funded Child Care Subsidy	8	15.4%
• Head Start Enrollment	6	11.5%
• Free and Reduce Lunch	9	17.3%
_____		
• At Least One Indicator	15	28.8%
• None	37	71.2%
Education Level of Mother		
• Less than High School	9	17.3%
• High School	13	25%
• Some College	17	32.7%
• College or More	19	36.5%
Education Level of Father		
• Less than High School	3	5.8%
• High School	13	25%
• Some College	13	25%
⇒ College or More	18	34.6%
Education level of Family		
• One Parent completed High School	51	98.1%
• Missing	1	1.9%
Race of Child Being Tested		
• White	37	71.2%
• Mixed of minority group	14	26.9%
• Declined to describe	1	1.9%
_____		
• White/European decent	34	
• Black	4	
• Hispanic	1	
• Asian	4	
• Mixed Race	8	
• Declined/missing	1	

All children in the study group were English speaking. Efforts were made to include Spanish speakers, who were the largest second-language group. However, the trained providers who served the vast majority of Spanish-speaking children work with migrant children. These programs were not in session during data collection periods.

The children were also selected to ensure that approximately equal numbers were in the care of higher- and lower-quality providers. The child distribution by quality setting is in Table 2.

Table 2. Distribution of Children By Quality Level of the Provider

Quality Level of Provider	Number of Children	Percent
Lower quality	28	53.8%
Higher quality	24	46.2%

Trainers and Mentors

Interviewing a small random sample of trainers and mentors was done to capture some of the process questions. July 2000 phone interviews were conducted with eight trainers and six mentors, including one Spanish-speaking, bilingual mentor and one Russian-speaking, bilingual mentor. The trainers represented a wide range of professionals that mirrored the training team from master's degree-level trainers with multiple years of experience to associate's degree-level trainers who were new to working with adults. Mentors were not as diverse in their background, but were all experienced, actively working providers.

Instruments[2]

Provider Instruments

The provider instruments (survey and observation tools) were both specifically designed for the study to be sensitive to the Early Words curriculum. After reviewing the curriculum, a list of skills in each module was made. Observations of selected training sessions were made to confirm the skills were infused into the training. The survey tool was designed to measure self-reported changes in practice and attitudes on the skills along with some process questions. The observation tool was designed to look at the actual quality of provider practice.

Child Assessments

Three measures thought to be related to school readiness were used to assess literacy skills: alphabet knowledge, concepts about print, and emerging writing. All three instruments have been used in similar studies in other locations. In a 1999 Philadelphia study by Susan Neuman, these same three measures showed child gains as a result of a similar community training initiative. In another Neuman study (1996), the "concepts about print" measure was found to be sensitive to storybook reading. In a 1996 study by Victoria Purcell-Gates, the emerging writing tool and scoring system were found to be sensitive to naturalistic, age-appropriate writing activities. In a 1995 study by Snow, Tabors, Nicholson, and Kurland, similar tools were found to be highly

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[2] All instruments are available in the technical package, available from either author.

correlated to reading once children were in school. These studies are but a handful of recent research demonstrating that young children develop specific and formal literacy skills like alphabet knowledge, emergent writing skills, and book concepts if they are exposed to an age-appropriate quality literacy environment—one with quality books that is print-rich, language-focused, and child-centered.

Trainer and Mentor Interviews

An informal discussion was held between senior evaluation staff and key development team members at the end of the 2000 training. The project development team members were asked for their impression of the program's strengths as well as areas they would change in the future. Their ideas were folded into a set of 10 semi-open-ended interview questions with specific probes. The questions and probes were designed to assess successes and challenges from the perspective of trainers and mentors who actually delivered the curriculum.

Data Collection

Surveys and interviews took place shortly after the training while the observations and child assessments took place later to allow for training to take effect. Data collectors doing the observations and child assessments were trained in full-day sessions that included field work practice. Reliability checks were also done within the first few data collection visits of each data collector to ensure quality and consistency.

Observational data collectors were selected for their depth of professional experience in early childhood education. Most had advanced degrees in the field coupled with an average of 22 years of direct experience in programs. The child data collectors were a blend of graduate students in Education and Psychology or practicing teachers. Details of the data collection timetable are presented in Table 3.

Table 3. Data Collection Timetable

Instrument	Subjects	When Collected
Survey	• Trained providers	• 1–3 months after training
Observation	• Trained providers • Untrained providers	• 4–6 months after training • just prior to training
Child Assessments	• Children, aged 3–5, in the care of trained providers for 4 months or longer	• 9–12 months after training
Interviews	• Trainers and Mentors	• 1–3 months after training and mentoring

C. Key Findings

Outcome Questions

What Were Providers' Beliefs and Attitudes About Literacy and Language Practices After Early Words?

One of the first steps towards changing provider practices is to change their beliefs and attitudes about the importance of early language development and what it takes to create an environment that supports language and literacy. The evaluation found that after participating in Early Words more than 75 percent of participating providers responding to the surveys agreed the following literacy-enhancing activities were "very important:"

- reading to children every day,

- modeling reading and writing,

- helping children learn alphabet letters,

- allowing children daily free access to books and writing materials,

- having diverse cultures represented in books and writing materials,

- talking to children about daily routines,

- asking children about stories while reading, and

- sounding out words for children.

During observation site visits, many providers informally expressed excitement about the opportunity to participate in the training and made an effort to point out things they had changed like putting children's names on a coat rack, or the new books they had, or the new reading rug they were using. Thus, it appears that participants in Early Words are showing beliefs and attitudes that reflect the importance of key literacy-related behaviors.

What Was the Quality of the Literacy and Language Environment Among Providers?

Another goal of Early Words was to help providers learn about concrete changes they could make to their child care physical settings to best support children's early language and literacy development. After the training, providers self-reported making concrete changes to their environments, specifically:

- 86% of providers reported creating or expanding a book nook,

- 67% of providers reported creating or expanding a children's listening center,

- 55% allowed children to have more daily access to writing/ marking materials, and

- 53% allowed children to have more free access to books and materials.

Observers found statistically significant differences, or levels approaching statistically significance, with the trained providers having higher scores in the following literacy environment areas:

- The quality of the books available to children,

- Literacy displays, in particular the introduction of the alphabet, and

- Cultural diversity, including multicultural books, inclusion of more than one language when multiple languages are spoken by the children in care, and visual displays showing ethnic and racial diversity.

One interesting sidelight was the number of books in the environments. One goal of Early Words was to put an average of five books per child in the participating programs. Providers in centers had an average ratio of 4.5 while family care had an average ratio of 12.34. See Appendix, Table A-11. The untrained providers actually had slightly more books than the trained providers following the same pattern of centers having fewer books per child than family child care. However, the quality of the books was higher in the settings in which providers were trained[3]. For example, it was common to have grocery store books like the Golden Book series or old and tattered books in the untrained settings. It appears that as providers received books in training sessions and as part of the resource grants, they replace older and lower-quality books with the newer and better books. Also, informally, the observers reported that the trained providers were using the county's library book box program extensively.

The cultural diversity findings were particularly strong with trained providers offering more diverse images for children. Yet in interviews with the trainers and mentors, reservations were expressed about whether trainers felt qualified to address diversity issues. They wanted more training on this topic themselves. The observation scale looked at only very concrete aspects of diversity such as using books that show a wide variety of ethnic, racial, and language groups, and it did not address more subtle aspects of cultural awareness and competence. So even if trainers want more training on cultural issues, the fact that there were such strong differences in the trained and untrained providers on basic awareness suggests that the curriculum started in a good place.

The appendix contains detailed tables with findings for these and all items on the observation tool as well as the child outcomes described later in the report.

What Kinds of Literacy and Language Enhancing Behaviors Were Providers Using?

Early Words also provided training to help providers learn about positive ways that they could interact with children to support language and literacy. The trained observers found statistically significant differences, or levels approaching statistically significance, with the trained providers having higher scores in the following areas:

- Using songs and chants with children,

- Making children more aware of the alphabet in the context of activities, in particular, use of phonemes such the sounds in children's names or words in books, and

- Using storybook routines.

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[3] Book quality was rated as part of the observational data collection.

Trained providers themselves reported making changes in their behavior, specifically:

- Between 55% – 65% reported that they had better "reading-out-loud" skills such as pointing out features of print (55%), more regular reading (55%), or asking questions about stories (65%);

- 34% of providers reported engaging in "a lot more" modeling of writing, labeling of objects;

- 31% of providers reported engaging in "a lot more" language-supportive activities; and

- 31% reported working "a lot more" with children on alphabet letters.

Were There Patterns in Quality Findings Related to Care Settings or Training?

There were three patterns in the findings about quality: 1) the trained providers showed more variation in their scores, compared to the untrained group; 2) there appeared to be differences in quality between center and family care; and 3) overall global literacy quality, as well as specific items, were different between the untrained and trained provider groups.

Variation Among Trained Providers

The observations showed bigger variations in the higher-quality providers compared with lower-quality providers. The scores for a few of the quality items showed a great deal of variation in the post-training condition. Why this finding occurred is unclear; however, providers who were already thinking about, discussing with colleagues, or using the skills already may have benefited the most from the training. In other words, if they already were trying or thinking about the skill, the training helped them get better at it. This does not mean providers new to the idea did not implement the skill, but tended to not do it as well as providers with a head start. The topic areas that showed this pattern were:

- Writing center,

- Story retelling, and

- Storybook knowledge.

Quality in Center vs. Family Child Care

Providers operating in center-based child care settings tended to have higher-quality environments compared to family day care providers. Although both groups had a range of higher- and lower-quality care settings, centers tended to have higher scores overall. However, neither group had large numbers of providers with exceptionally high scores. Among trainer providers, the average quality score was 1.13 on a scale of 0–3, with a range of 0–3, with 3 being high quality. This suggests that most providers had room to improve.

Global Quality

In addition to observing for specific items within the key study areas, providers were rated on a one-item overall global literacy rating. This rating correlated highly (over .8) with the specific items. Trained provider global literacy ratings were statistically significantly higher than untrained providers. An interesting side effect of the literacy training is that it also appeared to positively impact general global quality ratings as well, although not to quite the same degree.

This suggests that literacy may be a non-threatening way to entice providers to training and boost their overall quality, as well as making it easier for them to consider training in less exciting, but equally important areas like health and safety.

Were There Outcomes Differences For Children In Higher- and Lower-Quality Settings?

For this analysis, the trained providers were divided into two groups (higher vs. lower quality) based on the scores of the direct observations of their practices. Children in both groups were tested using measures of alphabet knowledge, concepts about print, and emerging writing skills. A statistically significant difference, or levels approaching statistical significance, favored the children in the higher-quality environments on the following skills:

- Letter name knowledge;
- Beginning sounds of words such as "Z" is for zebra, "A" is for apple; and
- Emerging writing including approximations of print as well as letters and words.

There were no differences on the concept about print measures. However, because observers noted more reading behavior among trained providers—and providers self-reported increased attention to reading—it appears that not enough time is yet devoted to reading to children to see statistically significant differences. The instrument used is known to be sensitive to the amount children are read to, suggesting that children still are not being read to enough to see gains on the skills measured.

Process Questions

Did the training reach the desired lower-income providers and children?

Providers
During the 2000 training project there were 376 providers trained in 104 sessions in four languages (English, Spanish, Russian, and Vietnamese). In addition to training, 197 of these providers were mentored as well. While the majority of the providers were white/Caucasian, a significant number of minority providers were also represented (about 35% Hispanic, African American, Asian, and bi/Multiracial). Slightly more than one-third of the providers served children speaking English as a second language. About 60 percent of the providers also served low-income children. There was a mix of center-based (59%) and family child providers (40%). Various other roles in the early care and education community also were represented. Providers cared for the full age range of infants through kindergarten-aged children. One of the goals of Early Words was to engage providers serving low-income and minority children, and it appears that good progress was made in reaching this goal. The characteristics of providers attending training are summarized in Table 4.

Table 4. Description of Providers Attending Training

Characteristic	Number	Percent
Number of Providers trained	376	100%
Number of Providers mentored	197	38%
Racial Groups of Providers		
• White	263	70%
• Mix of minority group	113	35%
Providers serving ESL Children	132	35%
Providers serving lower-income children	218	60%
Type of Program		
• Center-based	221	59%
• Family Child Care	132	35%
• Other	22	5%

Children and Families
Families were asked to fill out a short demographic questionnaire when they signed permission slips for child testing. One striking difference between the families in the higher- and lower-quality groupings of the trained providers is that single parents appear to have their children in lower-quality care and more family child care settings. This is an incidental finding and not related to Early Words but is likely to be an important finding for the larger community.

The analysis that looked at the interface of quality, child outcomes, and family income showed trends suggesting that lower-income children are the mostly likely to benefit from higher-quality programs. They also show the lowest scores in low-quality care. Because the number of children in this condition was small, further study is needed to conclude this with authority. The breakdown of child outcomes by family income and provider quality is displayed in Table 5. Statistical tests of significance were not done since the sample size of some of the groups was too small for valid analysis. It is presented, however, to show important trends.

Table 5. Quality of Care By Family Income By Child Outcome

| Child Measure | Level of Quality and Income – Mean Scores | | | |
	Low Quality / Low Income (8 children)	Low Quality / High Income (20 children)	High Quality / Low Income (7 children)	High Quality / High Income (17 children)
Writing	5.1	15.0	18.6	14.2
Alphabet Knowledge	0.4	7.5	5.3	7.1
Letter Sounds	0.3	3.0	1.7	2.7
Beginning Sounds	0.0	3.5	3.5	2.8
Concepts About Print	1.9	3.6	3.6	3.2

The reasons for this finding about child care placement are not known, but may be that lower-quality care often costs less and single-parent families have less of their family budget available to pay for higher-quality child care. Also, Oregon offers limited publicly funded reimbursement for child care subsidies for lower-income families. Additionally, single parents may need the scheduling flexibility that family child care offers.

What appears to encourage providers to continue to come to training?

Three different groups were queried about incentives and barriers. Each had a slightly different perception of what keeps providers returning, but it is clear that some combination of concrete incentives and the professional climate created encouraged attendance.

The Development Team
The informal conversations the evaluation team had with the development team touched on incentive and barrier issues. Development team members thought that having a large enough budget to offer incentives was valuable. Key in their minds was promoting a sense of respect for the participants, whether the incentives were large or small. The large incentives included the resource grants and mentoring; smaller ones included providing food, flexibility in meeting needs for child care, and transportation. Evening and weekend meetings also helped ensure providers could participate outside of working hours.

Providers
The provider survey questions dealing with incentives and barriers did not show any differences in the number of sessions that providers attended by education level, years in child care, provider's ethnicity, or whether the provider served Adult and Family Services (AFS) or ESL children. However, family child care providers were somewhat more likely to attend more sessions and were more likely to serve children qualifying for USDA subsidies. This group of providers, who tend to serve children and families up to 180 percent of poverty, may have fewer professional supports available to them than other providers. Finally, the survey found that providers thought the resource grants and the mentoring helped them access resources for their programs and, thus, likely acted as an important incentive to go to enough sessions to qualify for these two program elements.

Trainers and Mentors
During interviews with the trainers and mentors, the theme of using professional rewards directly related to work as an incentive was continued. All mentors interviewed thought the resource grants were a "driving force" motivating providers, and several mentioned spending considerable time helping providers make selections for their grants. Five of the eight trainers also thought the mentoring acted as a practical, hands-on way to reinforce the ideas from the training sessions. Both trainers and mentors spoke about the value of the mentoring relationship in encouraging providers to try new ideas and extend the ones they had tried already.

What can we learn about the implementation that can be useful in refining and improving the project?

Overall, the trainers and mentors felt they were well trained, had sufficient resources and thought the support from PSU and the library was seamless. The trainers and mentors all noted a great

deal of substance in the curriculum materials but also mentioned that it was difficult to meet the needs of all of the participants. Generally, they identified a need for the following:

- Additional mentoring time that is focused to concretely improve language and literacy environments,

- Additional training to reinforce basic literacy development ideas and offer additional ideas,

- Additional sharing of resources promoting language and literacy, and

- Problem-solving strategies built into the training for managing materials and creating more time to read to children as well as implement information from the training.

D. Summary and Discussion of What Have We Learned So Far

The "bottom-line" questions of the evaluation are: 1) Does the training appear to make a difference in the quality of care, and 2) Does that quality make a difference in child outcomes? Given that pre-post measures on the same group of providers and children were not possible and that the sample sizes are small, conclusions about these questions must be made with caution. However, the data suggest that:

- Providers operating in center-based child care settings tended to have higher-quality environments, compared to family day care providers.

- Trained providers had higher overall global quality of their literacy environment as well as their general global quality, compared to untrained providers.

- Compared to untrained providers, the trained providers appear to have higher-quality practices in several important ways. But in particular, the following practices in trained providers were noteworthy:

  - ➢ having better-quality books available for children,

  - ➢ using multiple strategies thought to promote awareness of cultural diversity in children,

  - ➢ using more alphabet image and alphabetic awareness activities, and

  - ➢ using songs and chants.

- Children in higher-quality care environments were more likely to have stronger alphabet knowledge and emerging writing skills.

- Although not an outcome of Early Words, an important incidental finding is that single parents tended to have their children in lower-quality care environments.

These findings suggest that the training appears to have a positive influence in a number of key areas. However, given the low average quality scores, there is still room for improvement in the quality of the language and literacy environments among providers, even those who participated in Early Words. Yet, the positive attitudinal changes about the importance of early language and literacy development self-reported by providers suggest providers are open to continuing change.

Three other studies found similar results to this evaluation. Comprehensive community initiatives can improve the quality of child care and child outcomes, if significant funds and activities are focused on the issue (Bryant, D.M., Maxwell, K.L., & Burhinal, M., 1999; Kontos,

S., Howe, C., & Galinkhski, E., 1996; and Neuman, S.B., 1999). In particular, less well-trained family child care providers can make considerable changes in quality if they are supported. An example of the long-term payoff of support is that the development team is finding that halfway through the registration for the 2001 series more than 10 providers have taken the initiative to reenroll on their own to gain more information and talk with other providers.

E. Recommendations

Even though many findings suggest the Early Words is working, refinements—at least for some providers—are likely to increase the quality of child care in the county. It is suggested that Early Words consider:

- Including additional focused mentoring as part of the training to help providers identify specific ways to improve the quality of their language and literacy environments.

- Offering additional training to those already trained to further reinforce basic concepts, to offer child care providers additional ideas and information, and to share resources promoting language and literacy development.

- Building in more problem solving strategies for managing materials and creating time to implement information during the training and mentoring.

- Increasing the time spent on the importance of frequent and regular reading with children that uses story book reading routines.

Over and above these specific recommendations for program improvements, the Commission should take every opportunity to examine and promote strategies to improve the quality of child care programs used by single-parent, low-income families. Doing so may offer their children more equal access to quality early care and education.

F. References

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Appendix: Technical Tables for Outcome Findings

Table A-1. Trained and Untrained Average Score Differences from Observations

Literacy Area	Untrained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Trained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Significance Level of Means t-test
Books Center	1.16	1.47	.091 [a]
Writing Center	.79	.75	.804
Literacy Displays	.74	1.07	.074 [a]
Story Retelling	.71	.90	.305
Cultural Diversity	.49	.94	.012*
Language Development	1.36	1.58	.305
Alphabet Awareness	.60	.94	.105 [a]
Story Book Knowledge	1.29	1.43	.503
Scale of 0–10			
Global Literacy Rating of Quality	3.97	5.75	.001*
Global General Rating of Quality	4.87	5.98	.056 [a]

Differences on equality of means t-test

[a] = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

This table shows the differences between the mean scores (averages) of the two groups for each area studied. The lower the significance level, the more likely there is a treatment effect. The table shows the general categories studied as well as the overall global ratings, which correlate at a very high level to the specific items studied. Overall global ratings are based on one item each.

Table A-2. Differences in Items From Book Center

Book Center Items	Untrained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Trained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Significance Level of Means t-test
Condition of books	3.93	4.15	.282
Quality of books	2.20	2.62	.006***
Book nook or center accessible	1.71	1.85	.536
Related poster or stuffed animals next to books	.49	.88	.104 [a]
Special reading pillows or chairs in book center	1.37	1.60	.383
Puppets or puppet-making materials next to books	.41	.80	.108 [a]
Books arranged neatly	1.80	2.20	.105 [a]

Differences on equality of means t-test

[a] = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

Shows the level of statistically significant differences between the mean scores (averages) of the two groups. The lower the significance level, the more likely there is a treatment effect. Shows the breakdown of the specific items in this section of Table A-1.

Table A-3. Differences in Items From Writing Center

Writing Center Items	Untrained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Trained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Significance Level of Means t-test
Paper and writing tools are available in more than one place	.88	1.05	.512
Book-making tools are available	.90	.75	.500
ABC copying available	.93	.63	.202
Writing tools in play centers (blocks, dramatic play)	.41	.55	.519
Children's names are available to copy	.83	.75	.758
Provider encourages children to write	.66	.38	.249

Differences on equality of means t-test

[a] = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

Shows the level of statistically significant differences between the mean scores (averages) of the two groups. The lower the significance level, the more likely there is a treatment effect. Shows the breakdown of the specific items in this section of Table A-1.

Table A-4. Differences in Items From Literacy Display

Literacy Display Items	Untrained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Trained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Significance Level of Means t-test
ABC's or print on walls	1.07	1.68	.012 **
Use of children's names on labels and art	1.20	1.70	.195
Objects are functionally labeled	.51	.73	.333
Displays of books related themes	.39	.65	.211
Children's work related to books	.54	.57	.870

Differences on equality of means t-test

[a] = approaching significance

*= significant at .05 level or better, statistically significant with chance of error < 5%

** = significant at .01 level or better, statistically significant with chance of error < 1%

*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

Shows the level of statistically significant differences between the mean scores (averages) of the two groups. The lower the significance level, the more likely there is a treatment effect. Shows the breakdown of the specific items in this section of Table A-1.

Table A-5. Differences in Items From Story Retelling Center

Items	Untrained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Trained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Significance Level of Means t-test
Flannel board	.83	.95	.870
Chalk board	.68	.75	.766
Puppets or dramatic play	.61	1.00	.102 [a]

Differences on equality of means t-test

[a] = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

Shows the level of statistically significant differences between the mean scores (averages) of the two groups. The lower the significance level, the more likely there is a treatment effect. Shows the breakdown of the specific items in this section of Table A-1.

Table A-6. Differences in Items From Cultural Diversity Levels

Cultural Diversity Items	Untrained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Trained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Significance Level of Means t-test
Books show multiple ethnic groups	.98	1.68	.007 ***
If children speak more than one language, songs and tapes in those languages	.11	.50	.032 *
If children speak more than one language, labels on children's materials in those languages	.10	.48	.028 *
Visual displays reflect ethnic and racial diversity	.71	1.13	.090 [a]

Differences on equality of means t-test

[a] = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

Shows the level of statistically significant differences between the mean scores (averages) of the two groups. The lower the significance level, the more likely there is a treatment effect. Shows the breakdown of the specific items in this section of Table A-1.

Table A-7. Differences in Items From Language Development

Language Development Items	Untrained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Trained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Significance Level of Means t-test
Uses songs, chants	.95	1.60	.013 **
Talks to children about routines	1.68	1.45	.331
Puts words to actions child is using	1.46	1.65	.456
Extends language children use	1.34	1.45	.676
Balances listening and talking with children	1.40	1.75	.156

Differences on equality of means t-test

a = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

Shows the level of statistically significant differences between the mean scores (averages) of the two groups. The lower the significance level, the more likely there is a treatment effect. Shows the breakdown of the specific items in this section of Table A-1.

Table A-8. Differences in Items From Alphabet Awareness

Alphabet Awareness Items	Untrained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Trained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Significance Level of Means t-test
Talks about letter in context of activities	.78	1.02	.316
Talks about phonemes in context of activities	.41	.85	.052 [a]

Differences on equality of means t-test

[a] = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

Shows the level of statistically significant differences between the mean scores (averages) of the two groups. The lower the significance level, the more likely there is a treatment effect. Shows the breakdown of the specific items in this section of Table A-1.

Table A-9. Differences in Items From Story Book Knowledge

Story Book Knowledge Items	Untrained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Trained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Significance Level of Means t-test
Uses a story book reading routine	1.54	1.93	.096 [a]
Uses story extender activities	1.05	.93	.630

Differences on equality of means t-test

[a] = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

Shows the level of statistically significant differences between the mean scores (averages) of the two groups. The lower the significance level, the more likely there is a treatment effect. Shows the breakdown of the specific items in this section of Table A-1.

Table A-10. Differences in Use of Specialty Centers

Specialty Center	Untrained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Trained Group Average Score on Scale of 0–3 (0=not observed, 3=observed and high quality)	Significance Level of Means t-test
Book repair center	.03	.20	.104 [a]
Listening center	.75	.83	.737

Differences on equality of means t-test

[a] = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

Shows the level of statistically significant differences between the mean scores (averages) of the two groups. The lower the significance level, the more likely there is a treatment effect. These areas only have one item in them and so are not represented in Table A-1 because they are not summary scores.

Table A-11. Differences in Number of Books Per Child for Family vs. Center Care

	Average Ratio in Family Care	Average Ratio in Center Care	F Value	Significance
Untrained Group	15.72	4.79	17.96	.000***
Trained Group	12.34	4.50	9.04	.000***

Differences of F values

[a] = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

Shows the level of statistically significant differences between the mean ratio (averages) of the two types of child care in the untrained group and trained group. There appear to be fewer books per child in the trained group in both types of care. However, the quality of the books was higher (see Table A-2).

Table A-12. Child Outcomes Differences By Degree of Literacy Environments

Skill Area	Correlation Between Literacy Environment and Quality Ratings	Significance Level
Alphabet Knowledge • Letter names • Beginning sounds of words • Isolated letter sounds	 .284 .251 .132	 .041* .072 [a] .351
Writing	.257	.066 [a]
Print Concepts	.107	.449

Differences of correlation values

[a] = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

This table shows the relationship between the children's scores and the level of quality of the literacy environment in which they are receiving care. The higher the correlation, the more likely the child outcomes are related to the quality of care. This is not a causal effect, but rather shows how much the quality of care interfaces with the child outcome.

Table A-13. Interface of Family Configuration and Quality of Care

Level of Care Quality	Number of Children Living With Married or Partnered Parents	Number of Children Living With Single Parents	Chi Square Value	Significance Levels
Lower quality	15 (28.8%)	13 (25.0%)	3.74	.053 [a]
Higher quality	19 (36.5%)	5 (9.6%)		

Differences of chi squared values

[a] = approaching significance
*= significant at .05 level or better, statistically significant with chance of error < 5%
** = significant at .01 level or better, statistically significant with chance of error < 1%
*** significant at .001 level or better, statistically significant with chance of error < .1%

What the numbers mean

This table shows the difference between the percent of single vs. married parents who put their children in higher- vs. lower-quality care. In this case, single parents appear to have their children in lower-quality care. The reasons for this are not known, but may be that lower-quality care often costs less and single-parent families have fewer financial resources available to pay for child care. Also, single parents tend to have lower incomes, and Oregon offers them limited publicly funded reimbursement for child care subsidies.