I. Introduction

Since the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA), a greater need for child care among low-income parents with young children has been created to meet their increased work requirements. Although Head Start set one of its objectives to enhance educational achievement specifically for low-income children, it has not been able to fully meet changed needs from low-income, working parents, due to the fact that it usually runs on a part-day, and part-year basis. To overcome this limitation, there has been a growth in partnership between child care and Head Start. In this paper, I look into partnerships between child care and Head Start which allow low-income parents to work, while their children can receive full-day, full-year Head Start services. Although partnerships intend to improve quality of care and to meet changed needs from low income working parents, questions still remain about the effectiveness of partnership. First, I look into the relationship between partnership and observed quality of child care. Then, I look at the relationship between partnership and child outcome.

II. Research Design and Data

Partnerships between child care and Head Start are defined as a Head Start program formally contracts with a separate organization's child care center or family child care provider to serve Head Start eligible children at the center or family child care provider's home for the full day and full year and, using Head start's resources, to provide comprehensive service to children and families. Since there are great variations across states in policies, regulations, financial supports related to partnership, in this paper, I focus only on Head Start partnerships in Ohio. Data was collected from both partnership and non-partnership through surveys, classroom observations, and child assessments. Through surveys to center directors, information about their audit status, services they provide to families, trainings, teacher's education level, and other structural measures of quality was collected. Among those who participated in survey, 66 centers agreed to participate in classroom observations. Classroom observation data was collected using ECERS and ELLCO. Child assessment data was collected from children in those 66 centers using the Peabody Picture Vocabulary Test-III (PPVT-III), the Preschool Language Scales-4 (PLS-4) – Auditory Subtest, and the Phonological Awareness Literacy Screening for Preschool (PALS-PreK). All three rounds of child assessment data were completed - about 303 children were assessed in 2004, 235 children in 2005, and 68 children in 2006.

III. Empirical Models/Research Methods

To answer the question whether or not the partnership with Head Start improves quality of child care, first, I estimate the following model in which the quality of individual child care provider $j$, $QUAL_j$ is assumed to depend on the partnership status of provider $j$, $PARTN_j$, its years of partnership, $YRPARTN_j$, and a set of provider-specific characteristics, X:

(1) $QUAL_j = \alpha_0 + \alpha_1 PARTN_j + \alpha_2 YRPARTN_j + \alpha_3 X_j + \varepsilon_j$

where $PARTN$ is an indicator variable and $\varepsilon j$ is an error term. The vector $X$ includes provider characteristics such as type of care (center-based or family child care home based settings), audit status (not-for-profit or profit), observed teacher-to-child ratios,

percent of families receiving subsidies, average enrollments, provider's education level and years of experience in early childhood, participation in USDA Food Program and so on. Since the environment rating scales, ECERS, used as measures of classroom quality, range from 1 to 7, equation (1) can be estimated using ordered probit. However, it is estimated using simple Ordinary Least Squares (OLS) given small sample size. It is of interest to examine, first, if the partnership status turns out significant. If so, I will see to what extent the partnership status affects the quality of child care. However, the interpretation of this estimation requires some caution, since individual provider's partnership status is not randomly assigned, and therefore, it may be correlated with unobservable, $\varepsilon_j$, thus, the estimates of the effect of partnership will be biased. For example, well-established, highly motivated, and relatively high quality providers select into the partnership, the coefficient of partnership will be biased upward. To address this issue to certain degree, I include extensive measures of the relevant characteristics of providers in the vector $X$. However, selection bias issues may still remain if there are unmeasured characteristics that distinguish partnership providers from non-partnership providers. Due to cross-sectional nature of the data on observed quality, employing provider fixed effects is not an option. Given restrictions of the data sets and potential selection problems, I estimate two other equations that might be used as a partial check for the influence of provider-level unobserved heterogeneity. One, I simply add the variable of years in partnership in the model above. This allows the effect of the partnership varies by the accumulated years of partnership. If partnership effect improves the quality of care, the years of partnership will be significant and positive. The other method is the direct examination on the determinants of partnership using probit estimation. In this estimation, I include several input measures of quality, such as ratios, teacher's education and experience years as regressors to explore the possibility that higher quality providers are, indeed, selected into the partnership.

To answer if partnership improves children's school readiness, I examine the following equation for the child i in classroom j.

(2) $Y_{ij} = \beta_0 + \beta_1 PARTN_j + \beta2 X_{ij} + \mu_{ij}$

where $Y_{ij}$ is the assessment of child $i$ in the classroom $j$, $PARTN_j$ is the partnership status of the classroom $j$, $X_{ij}$ is the characteristics of child $i$, and $\mu_{ij}$ is the error term. The model above usually raises the same concerns, selection bias issues, as above because children who are receiving Head Start Service are not randomly assigned. To overcome this selection issues, I exploit the feature of mixed classroom settings in partnerships. A typical classroom in partnership centers includes both Head Start children and non-Head Start children and should follow all aspects of Head Start regulations including teacher qualification, trainings, ratios and group size among all others. Therefore, non-Head Start children assigned into a partnership classroom in a partnership center actually receive most of Head Start services, except some of comprehensive services such as home-visits. Therefore, when I estimate simple OLS of the model above with sample of only non-Head Start children in both partnership centers and comparable non-partnership centers, I can obtain the unbiased estimate of the effect of partnership on child's cognitive development. First, I estimate the model above with pooled child-level data from three rounds, using Huber-White estimator because data has repeated observations of some children. In this estimation, I do not exclude Head Start children in partnership

classrooms. Second, I repeat the first method only without Head Start children. It is of interest to see if the estimate of partnership status is significant and positive and to compare this estimate with the estimate from the first method. Third, I estimate the dosage effect by adding the variable of accumulated months spent in partnership classroom in the second method. Although methods discussed above alleviate the problem of selection into Head Start at child level, it is not totally free from selection bias at partnership center level. For example, children who select into partnership centers might be more likely to be disadvantaged, although they are not eligible for Head Start, than children who select into non-partnership centers. This is plausible although non-partnership centers were selected to be comparable to partnership centers in terms of socio-economic characteristics.

IV. Preliminary Findings and Discussion

The preliminary findings suggest that partnership is significantly predicting higher quality of child care. However, when the variable of years in partnership is added in estimation, there seems no significant effect of years in partnership. This finding cautiously suggests that higher quality providers may select into the partnership. In examining the relationship between partnership and child outcomes, preliminary results show that non-Head Start children in partnership centers do not perform significantly better than their counterparts in non-partnership centers and the variable months spend in partnership classroom does not seem to be a significant factor. One caution worth mentioning is that the effect of partnership on non-Head Start children in partnership centers is in fact underestimating the effect of partnership on Head Start children because it does not included comprehensive services that Head Start children and their parents are receiving such as health services, employment related services, and home-visits. In addition, this finding is somewhat puzzling because centers in partnerships are measured to be higher in classroom observed qualities than their comparable non-partnering centers. One plausible explanation is a selection issue in terms of children choosing into partnership centers versus children choosing into non-partnership centers. The other possibility is the measure of classroom quality may not have strong predictability in child outcomes.

V. Contribution

Although partnerships between Head Start and child care have been increased to respond to changed needs from low-income working families after welfare reform, there has been no research examining if partnerships, indeed, improve quality of child care and enhance school readiness of children from low-income working families. This paper is one of very first research focusing on the effect of partnership on quality of child care and ultimately child outcomes, although it requires some caution in interpreting findings due to potential selection bias issues.