

Non-Classroom Costs in Early Education Programs

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The problem of non-classroom costs begins with the definition of what they are. I would define them as including all costs that are not incurred directly in the classroom. This would include:

- Labor for administration and other common functions including fringe benefits for staff
- Supplies and materials for administration
- Supplies and materials for class use when bought in common
- Equipment for common use
- Overhead to a parent organization
- Food costs, facilities costs and transportation other than class trips
- Volunteers and donations that are common to multiple classes

Distinctions should be made between costs that are functionally non-classroom costs and those that are mere non-classroom in the center's financial records. For example staff fringe benefits for teachers are functionally a classroom cost, but in most centers, will be part of a central account which appears to be a non-classroom cost. By contrast, fringe benefits for the secretary and administrator are functionally non-classroom costs.

Each area of cost presents problems that can be solved with varying degrees of success. In preparing a survey, it is necessary to take into account the centers with poor records and to train interviewers to sort out the accounting mess that passes for records in those centers.

Problems include:

- Allocation of costs
- Imputation of costs where the actual expense is only occasional
- Imputation of costs where the actual expense is covered by donations or incurred outside the center.
- No records exist.

In the simplest cases the costs are actually incurred and simply must be allocated to individual classes. Glantz has noted that there are several possible rules for allocation, proportional to: direct labor costs; FTE caregivers; FTE children; total licensed capacity. I would add proportional to the estimated time spent on each activity or via a statistical regression of the cost on the measures described by Glantz. The purpose of the regression would be to identify which measure was most closely correlated to the cost item when there is no apriori for choosing a particular one.

Common Labor

Among the most important of the allocable expenses is the cost of labor for common functions such as administration. CQO did not attempt to allocate these costs because we regarded the center as the cost unit and the quality in the observed classes as a sample of quality for the center as a whole. As a result, allocation of costs to the individual class was unnecessary.

Director and assistant director costs include some costs directly attributable to teaching; the directors in CQO claimed an average of nearly ten hours per week teaching their own group or substituting. These costs should probably be allocated directly to the costs of those classes, although the higher cost of having the director teach a class may or may not be reflected in higher quality in the class. CQO directors claimed an average of 19 hours in curriculum supervision, group staff meetings, individual staff meetings, professional development committees, hiring staff, and settling conflicts. Intuitively, these hours would be most closely related to FTE caregivers. Relating them to labor costs is unattractive as the better paid labor is probably the most self supervising.

Directors claimed 8 hours meeting with families, making community presentations, planning for the future, teaching ECE in the community. Intuitively, these relate to future enrollment and therefore to current FTE children.

The 18 hours that directors claimed to spend on administration, work with board and gathering resources have no obvious correlate and any allocation is arbitrary. Almost two-thirds of directors claimed an average of 3 hours per week managing volunteers, time that would presumably follow the actual use of the volunteers. Much of this data is, of course, suspect at least at the ends of the distribution, as many of the entries were as low as zero or as high as 40+ hours per week.

If one is attempting to identify costs with specific classes, presumably the director's time with specific staff should be disaggregated. Only by allocating time based on specific staff, can you account for the true costs of the high paid self-reliant teacher versus the low paid junior teacher who needs help all the time. The problem, of course, is that this data is most likely unavailable.

Fringe benefits for staff are normally allocated as a percent of payroll. If, however, there are differences in who qualifies for particular fringe benefits, there may be a need to disaggregate the benefits. The benefits for teachers and aides are classroom costs and follow the particular teachers and aides. The benefits for central staff - directors, secretaries, etc. - presumably follow the salaries of those staff. The problem here is likely to be that there are no data available to disaggregate.

Whatever method is chosen for allocating administrative time, will involve approximations and will introduce noise into the measure of cost per child. Presumably, assistant directors would have different allocations of their time than directors, probably more of it in direct class contact and much of the remainder is some subset of the administrative chores.

Secretaries and bookkeepers would have still different distributions of time, quite possibly more related to FTE children.

If one is looking for an arbitrary rule for allocation, one could do worse than to take the administrative labor costs, divide them in half and allocate one-half proportional to FTE direct class staff and one-half proportional to FTE children.

Labor cost for specific programs such as food preparation and transportation should be allocated according to who uses them. For example food may not be used by infants and therefore should not be charged to that group. For those who are fed by the center, both the cost of the food and the cost of the labor to prepare it are likely to vary at least by age and amount of time spent in the center. An additional problem arose in CQO with regard to food. It was not always clear whether the food costs reported were gross or net of reimbursement by CACFP. If food costs in a center were net and reimbursement was also reported, then double counting occurred.

Transportation costs may also be identifiable by customer group, but are covered in another presentation.

Some centers have a wide variety of additional special purpose staff (health consultant, atelier, computer instructor, etc.) that may relate to some subset of programs and not to the whole center. Allocation of these may require time studies of where their services are used. Allocation proportional to FTE in the particular classes that use the service is an approximation.

Supplies, materials, equipment, facilities and overhead

Supplies and materials are commonly bought out of a central account. Those for administration and support programs might reasonably follow the allocation of labor costs in these functions. Those supplies and materials for class programs should logically go to the program for which they are bought. Clearly there are likely to be differences among programs in the intensity with which they use supplies. A center may have trouble assigning supply and material costs to administration versus individual classes. Then the administrative supplies need to be allocated.

Equipment and facilities costs introduce an additional problem in cost estimation. Each expense may occur once for several years of use. In CQO, we used a combination of replacement costs, mortgage payments, and depreciation to estimate the costs. When one is lucky, the costs are in the form of rent and the only problem is allocating the cost. More often, the center buys equipment and facilities and then depreciates them. In principle, depreciation reflects the cost of the wear and tear on the item and is therefore a good basis for imputing the cost of the equipment or facility. In reality, of course, depreciation is based on what the IRS will permit, which may or may not reflect the historic cost of the item as it is used. In addition, depreciation cannot reflect the changes in cost due to inflation (important especially for facilities) or technological change (important for computers, etc.) nor the interest costs of holding the equipment or facility for future use.

CQO used the mortgage payment or rent or imputed rent for the cost of facilities. If the center had no facility costs or costs that appeared absurdly low (e.g. mortgage payments on a center bought 20 years earlier for perhaps one-fourth of current prices) we asked local real estate personnel what comparable space would rent for in that area. Even for recently purchased property, mortgage payments reflect the cost of the property only if the property has an economic life similar to the length of the mortgage. Facility costs are being covered in a separate session so we will not go further here.

For equipment, CQO used depreciation plus expenses for maintenance and rental as an estimate of costs. It is not clear that all centers reported all of their costs in this area. Some may also have double counted expenses.

Once costs for equipment and facilities were imputed to the center based on depreciation, current expenditures and mortgage payments, there would still be a problem of allocating expense to classes. For facilities the obvious allocation is by square foot used. The common facilities might follow that allocation or might follow the allocation of labor time for the common staff. For equipment, an accurate allocation would require disaggregating and identifying the use of each item of equipment. For example, swings should not generally be charged to infant programs and cribs should be charged exclusively to such programs. It seems unreasonable to believe that differences in use of equipment would balance out across programs. It may be possible to study a few centers intensively and develop a ratio of equipment in preschool programs to that in infant programs and similar ratios for all programs, which then could be applied to centers in general.

CQO also attempted to estimate transactions between centers and their parent organizations. In for-profit chains, a charge was sometimes made for overhead provided by the chain. Allocations for that cost should presumably follow the chains rule for charging the overhead. The allocation may be a percent of revenue which in turn follows cost per child more closely than anything else. Other chains did not have overhead charges, but profit targets, which again probably followed cost per child. In centers run by school districts, there were no charges, but services were provided by the district which had little idea of their cost per child. Other nonprofit centers also received services from their parent with little or no record of either the service or its value. Examples included insurance, director's salary, facility, cleaning, bookkeeping. If the center cannot estimate the value of these services, some form of imputing will need to be developed, possibly based on the average costs in centers that itemize the category.

Volunteers and donations

If one acknowledges the existence of volunteers and donations in the accounts, they present still more problems in estimation. If a donation or volunteer replaces a market purchase and does so at equivalent quality, then the problem is simplified. The cost is the replacement cost of the volunteer. In that case, the only imputation problem is figuring out what the market cost would be. One may be tempted to use the opportunity cost of the volunteer, but that could lead to absurd results if, for example, a lawyer volunteers to help with cleanup chores.

Greater difficulty arises if the quality is different or if the center would not have purchased the labor or donated item. If the quality is higher or lower than the market equivalent, some method is needed to adjust the value from the market value. In CQO we asked for the condition of donated equipment and asked the interviewer to form an opinion, but I can't recall what we did with the information.

If the center would not have purchased the donated item, then we know from theory that they do not value it as much as its market price which they choose to spend elsewhere. If they accept the donation, we also know that they value it more than zero and more than the space it takes up. All we really know is that the value is somewhere in between. This problem comes up elsewhere in the valuation of any non-market good. The traditional valuation is the consumer surplus generated by the good. The old diagrams use a triangle that approximates the demand curve with its hypotenuse and produces the result that the average value of such donations is one half of the market value of similar items. CQO undervalued some donations because we failed to ask for the value of any equipment donated prior to the current fiscal year. Donated equipment is thus a mess. It has uncertain (but not zero) value, to be depreciated over an uncertain period (it is sometimes used equipment) and then used by different groups within the center.

Donated labor is conceptually the same as donated equipment and services. No one would dispute that donated insurance has value, but for some reason, some economists have challenged the concept that people can donate labor. If volunteers improve the program as they clearly did in at least some of the CQO centers, then they have value. That value is somewhere between very little and the cost of replacing the volunteer with market purchased labor. The same is true for the person who donates their labor for \$1 per year. If that is the case, then the same should be true for a person who works for say half of what they could earn elsewhere. In that case, however, it become necessary to verify that the person could indeed earn twice as much elsewhere, that the skills of the person are relevant to the job being done and that they are not doing the child care work simply for their own satisfaction. We were unable to sort out altruistic versus other motives for doing child care work, but we did statistically match the workers with other employees (including child care workers) to find some estimate of how much more they could earn elsewhere. Obviously no match is perfect, so we offered cost estimates with and without any foregone wages to bracket reality.

Outside the class, the donated labor is largely donated services such as maintenance and bookkeeping. Once some value is settled on for these services, presumably based on cost of buying the service in the market, the problem devolves back to the allocation problem for administrative services generally.

All of the non-classroom costs have the allocation problem. In some cases costs relate to functions that can be tied directly to a class and therefore should be. In other cases they cannot. In those cases, the choice between allocating based on labor or based on FTE enrollment of children may be arbitrary. One is kidding oneself to think that we can precisely allocate costs to the class level. We can, of course, approximate. With greater resources to sort out some of the in between cases, and with regression techniques on subsamples, we can approximate with somewhat greater accuracy. But we should always remember that it is still approximation.

The good news is that non-classroom costs other than facilities are probably less than 20% of total costs and will not grossly affect cost per child even if misallocated.