

Draft Report of the SSI Taxonomy Committee

Provided to

The State Share of Instruction Consultation

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SSI Taxonomy Committee Membership

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Charge of the SSI Taxonomy Committee

The taxonomy subcommittee is charged with reviewing the current subsidy model clusters and recommending models or clusters that will have a balance of the following characteristics:

- 1. Have similar costs and characteristics: Each model or cluster will include subjects and levels of instruction with similar costs or characteristics. Every effort will be taken to avoid costly programs grouped with inexpensive programs and vice versa. This is important because in the SSI formula, the cost of each subject and level of instruction is represented by the cost of its model or cluster. The range from the high cost to the low cost for each model or cluster should be as uniform as possible.*
- 2. Be predictable and easier to manage: The models or clusters should be reasonable to administer and should be supportive of the planning and forecasting needs of both the campuses and the Board of Regents. Ideally, each model or cluster would have similar number of enrollments and those enrollments should be of sufficient size to allow the model to have relatively stable average cost over time.*
- 3. Easier to understand and communicate: The models or clusters should represent identifiable groups of instruction to state policy makers and campuses. When new academic programs are developed, it should be apparent early in the planning process which models or clusters will support the new program.*

Once the subcommittee has identified a limited number of viable alternative taxonomies, it will investigate the fiscal ramifications of any proposed taxonomy at the campus level. This means applying the current SSI formula using the new taxonomy. The subcommittee may need to consider areas where some of the components of the SSI formula, such as the fee assumption and POM rates, might need to be restructured.

The subcommittee understands that recommendations should be made to the full SSI Consultation by February, 2006.

Findings and Recommendations

Introduction

The SSI Taxonomy Committee has met regularly for the past five months in pursuit of meeting the committee's charge. The Committee's work builds on the considerable efforts of the sub-committee from last biennium's SSI consultation. The work of the previous sub-committee that proved to be valuable in our deliberations included:

- ▶ *Identification that subject fields with similar costs were being funded in many different models with much different reimbursement rates. (See Attachment A)*
- ▶ *Rules for ignoring subject field / level combinations with an average enrollment of less than 15 FTE per year and for using the predominant enrollment model when subject field / level combination mapped to multiple models in the current system.*
- ▶ *Multiple attempts to model various models, including one that proved to be the starting point for the subject oriented taxonomy that we are recommending in this report.*

Structure of the Taxonomy

We have developed a consensus as to the structure of the taxonomy that we believe is superior to the current SSI taxonomy using the criteria listed in our charge. In other words, we have developed a subject oriented taxonomy that has reduced the amount of cost variance between the average costs of the subject field / level of instruction grouping to the model average cost by forty-two percent.

*While the Committee has discussed numerous different groupings, the Committee quickly came to a consensus that a subject oriented grouping taxonomy was preferable. **The structure of this recommended taxonomy was to group subject fields within three distinct taxonomy groupings:***

- ▶ ***Arts & Humanities (AH)***
- ▶ ***Business, Education, & Social Sciences (BES)***
- ▶ ***Science, Technology, Engineering, Mathematics, and Medicine (STEM²)***

The committee also explored the cost data within each of these groupings by subject field and level of instruction to determine the appropriate clustering into models. The committee examined six years of Resource Analysis data in its review of costs (FY 1999 through FY 2004). In exploring costs, the committee elected to use total costs rather than attempting to differentiate the various components that contributed to total costs (e.g. Plant Operation & Maintenance, Student Services, Instruction, etc.). This is an important distinction, especially when we begin to discuss implementation issues within the SSI model. As mentioned previously, we elected to ignore subject field / level

combinations that had an average of less than 15 FTE per year for the six-years of data for purposes of determining the appropriate model groupings. However, these subject areas are included within the taxonomy structure.

Where possible, the committee attempted to identify gaps in the average costs by subject field / level to try to truly average like costs and to protect against having a subject field with like costs within a taxonomy grouping fall into two different models. We also attempted to categorize subject fields so that the minimum and maximum cost ranges for a model were not more than fifteen percent higher or lower than the average cost for the model.

*The committee endorsed the idea of using more than one year in determining costs for models. It was felt that using six years of data (with prior years' data being inflated to the most recent year's equivalent) would provide more stability and predictability in model rates. **Therefore, the committee recommends that the Ohio Board of Regents change the basis for determining model costs from a single year of Resource Analysis data to a rolling six-year average of Resource Analysis data.***

Attachment B provides a summary of the structure of the recommended taxonomy. Attachment C provides a summary of the differences in modeled costs between the current model structure and the recommended taxonomy by subject field / level. Note that Attachment C summarizes the impact for total enrollments over a six-year period. Annual amounts can be estimated by dividing by 6. However, note that the enrollments used for Resource Analysis include both subsidy eligible and ineligible FTE's, while SSI allocations are based only on subsidy eligible FTE's.

*The Committee noted the validity of the approach that we are recommending is centered on the accuracy of the data. **Therefore, the Committee recommends that the Ohio Board of Regents review its data gathering systems (Course Inventory Expert System, enrollment audits, financial data submissions, etc.) to ensure that data is reported as consistently as possible. Further, the Committee recommends that OBR reconvene the HEI Advisory Committee or similar body to provide institutional input and guidance for these data issues.***

In reviewing the data, the Ohio Board of Regents pointed out several manual adjustments that were made to the current system that needed to be reviewed. These included the treatment for Foreign Exchange students, the enforcement of the Baccalaureate limits (no two year campus is allowed to have more than 30 percent of its enrollment in Baccalaureate courses), and the treatment of Ohio University's correspondence courses.

In response to the review of manual adjustments, the Committee recommends the following:

- ▶ **Foreign Exchange students will be reported within the Arts & Humanities 3 model. This model was chosen because the costs are closely aligned with***

the current Baccalaureate 2 model where Foreign Exchange enrollment is currently assigned. Also, that model houses the foreign language offerings that most Ohio students will be taking while studying abroad.

- ▶ *The committee recommends that the 30% Baccalaureate limit be eliminated. No two-year campus currently is at the 30% threshold and the new taxonomy will make it more difficult to enforce this provision. However, it is recommended that OBR periodically review this issue.*
- ▶ *It is recommended that the Ohio Board of Regents work with Ohio University to ensure that its correspondence courses are treated consistently with similar courses. For purposes of modeling, these courses have been mapped to the Business, Education, and Social Sciences 2 model. In the future, the appropriate new model within the taxonomy will be utilized.*

Among the more significant adjustments that occurred within the review of costs was the decision to modify the Medical 1 model. It was determined that the costs for the Clinical Psychology program at Wright State University and the Optometry program at The Ohio State University were more closely aligned with the STEM² 7 model than the Medical 1 model. These had program costs that were approximately \$25,000 or 47% lower than the other programs within the Medical 1 model, while their costs were within one percent of the STEM² 7 model average.

As mentioned earlier, our analysis of variance between subject field / level of instruction taxonomy and the current SSI taxonomy resulted in reducing the amount of variance by over 42%. When considering the Undergraduate level alone, the variance was reduced by approximately 45%. Consistent with the current SSI taxonomy, the new taxonomy has a larger proportionate share of variance at the graduate levels. Several efforts to reduce the variance at the graduate level were not successful because:

- *There are relatively smaller enrollments at the graduate level than at the undergraduate levels.*
- *While most undergraduate programs are offered by most institutions, that is not the case for graduate programs, where programs are offered less universally. This makes it difficult to add models without introducing other problems related to the small size of the model (volatility) or one institution having the majority of the enrollment in the model (lessening the value of the average cost methodology).*

It should also be noted that the Committee discussed similar concerns with the campus redistributive impact at the two-year institutions because:

- *Many two-year institutions have smaller campus enrollments than most four-year institutions.*
- *Individual programs or a couple of programs can represent a more significant share of a two-year campus' enrollment.*

These factors make it possible to have a higher percentage of two-year funding impacted by redistribution as a result of the introduction of a new taxonomy.

The above concerns also have been a significant problem within the current SSI taxonomy. The recommended subject oriented taxonomy has increased the number of models in which two-year campuses participate. However, further improvement is made difficult by some of the same limitations mentioned above within the discussion of graduate programs.

The committee elected not to review Doctoral level courses because they are already funded using a set-aside allocation that removed them from the enrollment based components of the SSI calculation. Thus, courses at the doctoral level will continue with their current classification of Doctoral 1 and Doctoral 2.

In summary, the Committee feels that we have been successful in identifying a taxonomy that is superior to the current SSI taxonomy, in accordance with the criteria identified within our charge:

- **Have similar costs and characteristics:** *Each model has subject fields / levels of instruction that have similar costs and characteristics. The use of subject oriented taxonomy provides a discipline based backbone using the federal classification of instructional program (CIP code) taxonomy that provides for similar characteristics. The addition of more models has enabled us to ensure similar costs, the variance has been reduced by nearly fifty percent, and nearly every subject field / level within each model falls with +/- fifteen percent of the models cost. **The recommendation for the Ohio Board of Regents (OBR) to strengthen data integrity of Resource Analysis through additional guidance and review will also help ensure that like subjects and costs are treated consistently.***
- **Be predictable and easier to manage:** *The committee feels that the recommendation to use total costs based on a moving six-year average cost from Resource Analysis will add to the stability in modeled costs. The committee believes that the size of the enrollments in each model is sufficient to allow costs to be relatively stable over time. Also, we believe that the structure will enable OBR, through a consultation process, to adapt the taxonomy to reflect updated cost data if costs change significantly. The committee feels that it is imperative that the data be reviewed on an annual basis by OBR and that the data are discussed with institutions on a biennial basis.*
- **Easier to understand and communicate:** *The use of subject oriented taxonomy makes it easier for interested parties outside of higher education to understand. The committee believes by making the disciplinary grouping the primary descriptor, it will be easier to understand, both within and outside of the higher education community.*

The Committee, having come to a consensus on the taxonomy structure, turned to the remainder of its charge to investigate the fiscal ramifications on campuses.

The SSI formula

Early in its deliberations, the Committee evaluated whether to review costs by total costs or by component. It was decided that we would proceed using total costs, with the goal that this might enable us to explore simplifying implementation within the SSI formula by eliminating POM and Student Service weights either entirely or by replacing them with one “adjustment factor”.

We spent considerable time and effort attempting to be able to explain the fiscal ramifications of each of these SSI changes on campuses and institutions. Attachment D provides a summary of these steps. We have provided the cost of each of steps and normalized the costs assuming that no new SSI dollars were available to fund these changes. Below is a summary of the steps we modeled and a brief rationale for its existence:

Step 1: Provides a summary of the SSI impact to each campus from simulating current fee structure and using the new taxonomy.

This is the step that is the most directly related to the charge of the Committee in that it provides the impact from moving to a new taxonomy. In this step, however, we have not yet incorporated the recommendation to use six-years of Resource Analysis data, and it is still reliant on the current “local contribution” standards that a majority of the committee have concerns about. Note, that because of the new model structure we had to simulate the new fee structure. This simulation was accomplished by examining the new taxonomy’s composition (using where the subject field / level had been mapped in the current taxonomy) and using a weighted average of local contribution amounts from the current model.

Step 2: Provides a summary of the SSI impact to each campus from using six-years of Resource Analysis Data rather than one year’s data.

This step enables us to evaluate the impact of moving from one year’s data to a moving six-year average of data that should provide for more stability in model costs over time.

Note that steps 3 through 6 summarize the impact of eliminating several adjustments in the current SSI calculation that provided differential allocations based on individual campus cost drivers. It was also recognized that the current formula does not explicitly take into account other cost drivers that differ from campus to campus, e.g. the additional costs associated with having a larger proportion of full-time tenured faculty. The Committee, in taking a total cost approach in the construction of the

recommended taxonomy, identified as a priority the potential that the model can be simplified substantially by removing these adjustments.

Step 3: Provides a summary of the SSI impact to each campus from removing the square footage POM allocation.

The Committee attempted to move to a total cost approach with the hope of simplifying the calculation of the SSI formula by eliminating some the campus related cost factors. The square footage allocation was put in place almost a decade ago, when the State moved to activity based POM calculations. It was established to recognize that certain institutions had more space on the books than an activity formula provided for. The hope was that over time, the amounts between the square footage POM and activity based POM would converge. For the most part this has occurred. This allocation totals only a little more than \$7.7 million statewide and it benefits only a few institutions. However, the impact to these institutions is significant. For example, it represents more than 25% of the total SSI calculation for the Agricultural Technical Institute (ATI) at The Ohio State University and for Central State University and is significant at several other campuses. Therefore, this factor will be important later in this report when we discuss the issues of allocation and transition.

Step 4: Provides a summary of the SSI impact to each campus from removing the POM Activity Weight from the formula.

The primary purpose of the activity based POM weights have been to recognize the fact that space is required for activities outside of the costs for instruction that is reimbursed through the SSI. The activity based POM weightings have been based on the amount job training activity and sponsored research activity relative to instruction.

Step 5: Provides a summary of the SSI impact to each campus from removing the Student Services Weight (based on headcount to FTE ratio).

The current SSI formula acknowledges that various institutions have different Student Services costs based on the headcount number of students they have relative to the FTE numbers. This weight adjusts a statewide Student Service cost by a factor related to the headcount to FTE ratios of the various campuses.

Step 6: Provides a summary of the SSI impact to each campus from using model cost rather than statewide average cost for the Student Services component.

The current formula uses one Statewide average cost for Student Services for all students regardless of the model. This step of the analysis provides an estimate of the impact if this cost is taken back to the average costs for the model.

Step 7: Summarizes the impact of moving to a uniform State share for each model, as the starting point for a revised method of calculating SSI earnings by model.

As discussed earlier, a majority of the committee have concerns related to the fact that the current local contribution amounts do not have a clearly understandable rationale. Rather, they reflect historical relationships that have been seriously impacted by the recent decline in state funding per FTE. This has caused a significant negative leveraging within the lower models of each level of instruction (e.g. GS1, Bac1, and MPD1) that has resulted in differential impacts at the institutional and sector level. Thus, the committee wanted to explore a change in methodology that moved to a Uniform State Share concept as a starting point for discussion of the various funding models, recognizing that we would want to adjust this uniform share based on a number of factors. The concept of Uniform State Share is that the State reimburses each model by the same percentage of the model's cost. The Committee recommends that the nomenclature for this concept be expressed as "State Share" instead of the "Student Share" (Local Contribution) to better describe how state appropriations fund higher education costs. Key to this discussion was that any adjustment factor should be separately identified and analyzed, so as to make the process as rational and transparent as possible.

The remaining steps in our analysis were our attempts to balance the major redistributive impacts of moving to a uniform State share with a rational package of adjustments that we provide for consideration.

Step 8: Summarizes the impact of removing the doctoral set-aside from the Uniform Share calculation.

As previously discussed, the Taxonomy Committee did not attempt to change the Doctoral Set-Aside component of the current model. This step summarizes the impact of this decision.

Step 9: Summarizes the impact of providing a 25% weighting to the Uniform State Share for the graduate models.

The committee discussed the need to provide a differential State Share for graduate students because of additional cost factors. After discussing the issue, the Committee recommended a 25 % weighting for graduate models. The primary reason for this recommendation is recognition of the significantly greater costs associated with graduate programs and the inability of the reduced state share resulting from the move to uniform state share to provide sufficient support for these programs.

Step 10: Summarizes the impact of ensuring that the STEM² models are funded at the current reimbursement rate or better. This step also makes up any funding not provided in the previous steps, to ensure that sufficient funding is provided to the Medical 2 model so that it equals the current allocation for the model.

The rationale for this step is that the STEM² models are impacted differentially by the combination of prior steps (Taxonomy and Uniform Share having the most dramatic impact), in part because the programs included in these models are among the most

expensive higher education offerings. Given the interest in encouraging enrollments in these subject fields to enhance economic development, the Committee felt that we should adjust the SSI calculation to ensure that each STEM² model be brought to its existing reimbursement rate. For those models where the reimbursement rate for the new taxonomy and formula exceed the current model and formula, the new taxonomy rate and formula has been used since it already offers more encouragement than the current model and formula. **However, the Committee recommends that STEM² models be reviewed in the future, with the goal of achieving a more standardized weighting structure.**

Please note that the committee ran several scenarios with STEM² models funded at reimbursement rates greater than those needed to bring STEM² models back to the current rates, but opted not to present those within the limitations of current funding. However, we do recommend that from a public policy standpoint that the Ohio Board of Regents consider requesting additional funding to provide further incentives to increase enrollments within the STEM² models.

The taxonomy itself did not have significant impact on the Medical 2 model. However, the introduction of a uniform State share had dramatic impact for this model since it has the highest cost and highest percentage of funding in the current structure. Given the presentations at the Clinical Subsidy Consultation that medical students were graduating with loans approaching the national limit (which is in excess of \$100,000), it was felt that we should not do anything else to exacerbate this amount. Our initial recommendation to establish a Medical 2 set-aside (paralleling the Doctoral set-aside) was modified in order to more readily accommodate increases in medical school enrollments that we understand are being considered.

Balancing Campus Funding Stability with Recommended Change

Perhaps one of the toughest issues that the committee has discussed is the issue of how quickly these changes should take effect. The current fiscal environment, resulting from the significant reduction in per FTE funding, already challenges the fiscal stability of campuses. Clearly, if the changes recommended in this report were implemented immediately, they would further jeopardize fiscal stability. However, some campuses are facing challenges today because of problems that this report is attempting to address. Thus, the transition methodology is extremely important.

The Committee chose not to recommend a specific transition strategy until it is known whether the recommendation package is accepted in total or whether it will undergo any significant adaptations. Also, while we have used the FY 2006 run of the SSI that assumes no stop-loss allocation to assess the impact of these recommendations, it is recognized that implementation of the new taxonomy/formula will not be implemented prior to FY 2008. As a result, much work will need to be done to update data that will determine the actual allocations and impacts. There is also a concern on the part of some Committee members that the final transition recommendations not disregard the

significant differential impact the current formula has had over the past several years, particularly at the campus level.

Having provided the above caveats and concerns, the Committee did attempt to begin a conversation regarding transition strategies and principles. Below is a summary of our discussions:

- ⇒ If accepted, our recommendations will result in significant re-engineering of the SSI taxonomy and formula at a time when the higher education core funding has suffered several successive years of very substantial reductions in per student funding. This argues for a sufficient phase-in period to allow institutions that are negatively impacted to adjust. This must be balanced by the fact that the reason we are recommending significant change is because we are not comfortable with the result that the current model is producing.*
- ⇒ We are not optimistic that higher education will be provided additional funding to help mitigate the implementation of the proposed changes. Therefore, in our modeling we have self-funded the proposed changes.*
- ⇒ We propose validating gains and losses resulting from the proposed changes versus a base year of SSI calculation without stop-loss (we have currently modeled for FY 2006 and have suggested that FY 2007 might be a more appropriate base year).*
- ⇒ One proposal that received significant support from the committee was to phase-in gains and losses over a reasonable period of time. If we do not phase-in losses, it has been recommended that the aggregate stop-loss buffer (applied after taking into account the impact of enrollment) be more generous than the current 3% stop-loss allocation to recognize that the overall funding changes are the result of changes to the formula, which are largely out of the control of campuses, as well as enrollment shifts.*
- ⇒ Several institutions have significant losses due to the elimination of long-standing practices that recognize unique circumstances or situations (e.g. square foot POM). Revisions to these practices may warrant special consideration for funding outside of the SSI calculation.*
- ⇒ The committee reviewed the issue of whether or not fiscal stability should be addressed at the institutional or campus level. **The Committee recommends that fiscal stability be measured at the campus level since the regional campuses and main campus management structures are separate and distinct.** It was also pointed out that all other analyses, e.g. the two-year and five-year averages are based at the campus level.*
- ⇒ Finally, it should be noted that the committee discussed the relationship between these methodological (taxonomy and formula) changes and the typical enrollment related changes that have been buffered through the stop-loss calculation. A concern was expressed that the current formula has resulted in considerable differentiation between campuses over the past several years*

because of enrollment growth coupled with reduced funding. The addition of the proposed methodological changes has the potential to compound these losses even more. Thus, whatever form the transition methodology takes, it should recognize that campuses have to adjust their operations to exist within this changing environment.

Concluding Observation

It should be recognized that our discussions, arguments, and conclusions were done in a professional and collaborative environment where the Committee strived to address the taxonomy from a holistic statewide perspective. Our efforts would not have been nearly as organized or informed without the extraordinary support we received from the OBR staff, in particular, Andy Lechler and Katie Hensel.

Recommended Next Steps

The Committee respectfully submits our proposal to the State Share of Instruction Consultation for your review. We recommend that the following next steps be taken:

- ⇒ The SSI Consultation consider these recommended changes and decide if the Taxonomy Committee's package and its components make sense from a State policy perspective.*
- ⇒ If the SSI Consultation decides that SSI implementation strategy, or any of its components need additional work, we suggest the Consultation decide the appropriate body to further review the recommendations. Hopefully, the SSI Consultation will be able to provide focus and direction to that body as to what specific issues they want to be addressed more fully.*
- ⇒ If the SSI Consultation decides that the Committee's recommendations are sufficiently sound to warrant a wider discussion, we recommend that OBR convene a consultation and invite chief fiscal officers (or other appropriate representatives) from all institutions to discuss the merits and concerns of the proposal.*